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IDENTIFIERS	*NAVAJOS

ABSTRACT

TO IMPROVE THE NAVAJO ARTS AND SKILLS, THE TEACHERS OF ROUGH ROCK DEMONSTRATION SCHOOL DEVELOPED THIS COMPILATION OF CURRICULUM GUIDELINES. THE CURRICULA FOR USE AT PRESCHOOL, ELEMENTARY, AND SECONDARY LEVELS AND INCLUDE (1) ENGLISH SKILLS, (2) MATHEMATICS, (3) SOCIAL STUDIES, (4) NAVAJO LANGUAGE, AND (5) SCIENCE. THE CURRICULA ARE DESIGNED TO (1) MEET THE NEEDS OF THE STUDENT, (2) DEVELOP CRITICAL THINKING, (3) STATE THE BASIC CONCEPTS TO BE LEARNED, AND (4) IMPLEMENT VARIOUS TEACHING METHODS WHICH EMPHASIZE PROGRAM FLEXIBILITY, STUDENT INVOLVEMENT, AND USE OF VISUAL AIDS. COURSE OUTLINES AND UNIT LESSON PLANS ARE PROVIDED. (AN)

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CURRICULUM GUIDELINES

1969

Rough Rock Demonstration School
Chinle, Arizona 86503

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CURRICULUM COMMITTEES

-1969-

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Curriculum Guidelines for the Skills of English

1969

Prepared by
the Teachers' Committee
of the
Rough Rock Demonstration School

A PHILOSOPHY FOR THE MULTIPHASED SKILLS OF ENGLISH PROGRAM

> "If a man does not keep pace with his companions,
> perhaps it is because he hears a different drummer.
> Let him step to the music which he hears, however
> measured or far away."
>
> Henry David Thoreau

If we are to prepare individuals to make wise choices and encourage them to regard learning as a process which begins at birth and ends only at death, we must create an environment in our school in which skills' mastery and practice in decision making go hand in hand. How much a school can influence a child's intelligence quotient is debatable, but we certainly should be able to influence his quest quotient and his skills quotient.

It is our contention that a multiphased program in the skills of English can be structured so that it will do this for our students. The teacher's role in this structure will mainly one of asking questions that reveal the basic structures of the discipline and of providing the resources (himself included) with which the students can seek solutions, both preferred and alternative.

The proposed structure is as follows:

1. Students will be placed according to their skills' achievement, and moved freely as skills improve.

2. Two hours of class time each day will be spent on the skills of English.

3. Students will have both group instruction and an individualized program.

4. Private study time will be given to:
    a. practice meeting deadlines.
    b. follow a schedule and keep materials in order.
    c. foster creative effort in work.
    d. follow directions and organize written work. (All work completed in private must be handed in, evaluated, and returned.)

5. Class time will be structured as follows:

    1. Presentation of materials by teacher or films. (20%)

    2. Analysis groups (5-8 students for problem solving and feedback). (40%)

    3. Individual work and reading. (40%)

6. Library and laboratories will be open after classes stop for further quest.

7. Each student will be given individual work to meet his own needs which he has been helped to identify.

STUDENT ORIENTATION

Suggestions for student orientation in all classes where English is used as the language of instruction for two weeks at the beginning of the year.

Student situation:

1. Lacks self-confidence.
2. Comes from an environment without English language stimulation.
3. English language skills have in all liklihood regressed.
4. May be physically below par.

Student needs:

1. Feeling of personal worth and confidence in his ability to succeed.
2. Recognition of school and learning as pleasurable experiences.
3. Physically and emotionally strengthening environment.
4. Language skills: thinking in, listening to, and speaking English in an experiential framework.

Suggested strategy:

1. Laughter inducing activity: games, songs, humorous verse, jokes, riddles, stories.
2. Experiential activity: a "food tasting", a "machine running", tape recording, collecting and classifying, group planning and process (actors-observors-recorders), group writing, dramatic play and role play, puppetry, word games, reverse "live-ins", field trips (real and vicarious --"We run a restaurant" "We stage a play"), creative art, "a happening", etc.
3. Physical and emotional fitness program: High nutritional diet in cafeteria, good grooming and health habits activities in dormitories and home economics, activities planned to foster group membership, physical checklist for teachers to pass to clinic, formal physical fitness tests and corrective exercises in physical education.

4. Language Skills:

Thinking: open ended stories, films, denotation-connotation wheels, retelling in chronological order, space order, cause and effect, pro and con, 5 "W's", classification.

Listening: story hour with non-verbal feedback...then verbal, recordings, filmstrips oriented toward all four outlined needs, listening inventories and experiments, following oral directions.

Speaking: role play, "how to" talks, interviewing, choral reading, recording and criticism, pantomime with verbal feedback, "Rigamarole"

Teacher musts:

1. Make a tactics plan which encompasses all needs as outlined for his group.
2. Vary activities to eliminate restlessness.
3. Take time for each child as an individual each day, even if it is only saying goodby to each child at the end of the day.
4. Use some informal evalauation (sociometric and linguistic) for measuring growth during orientation period.
5. Forget desire for a quiet classroom.
6. Work with small groups at some time during each day to reduce tension in using the second language.
7. Remember that planning should concentrate on providing a climate of warmth, acceptance, and stimulation that emphasizes a high percentage of classroom time devoted to oral English.
8. Be willing to make "a fool of himself".
9. Let the textbooks wait.
10. Praise liberally and sincerely, avoiding any negative criticism except that which comes from the group concerning a group activity, or from an individual concerning his own performance.

Minimum Skills Chart for the Readiness Levels for Reading and Writing of English (for the two levels of Follow Through)

Level Readiness- 1

I Developing visual-motor coordination and visual perception

Awareness of body parts

Drawing of human figures

Assembling features and body parts

Relationship of body to other objects

Body image exercises (Simon Says)

Exercises for laterality

Recognizing shapes

Recognizing numerals

Identifying colors

Matching samples

Observing differences in size

Left to right progression

Top to bottom of page progression

Tracing and coloring

Cutting placing and pasting

Sorting three dimensional objects as to size, form color, texture, and brightness

Shifting attention to pick out particulars from a grouping in gradations of difference and location

- Positioning and patterning of three dimensional objects
- Finger play

II Developing auditory ability and attention span.

- Rhyming
- Listening to a story, a record, a film
- Following simple directions
- Hearing middle sounds in words
- Hearing beginning sounds in words
- Listening for a purpose

III Developing the language of instruction

- Animals and Insects
- People
- Food
- Clothing
- Tools
- Big, little
- Circle, square
- In, out
- Cold, hot
- First, middle, last
- Left hand, right hand
- Next to, point to

- On
- Out of
- Outside, inside
- Over, under
- Question mark, period
- Row
- Top, bottom
- Up, down
- Yes, no

IV Developing oral language

Individual

- Pattern drills
- "Show and Tell"
- Story re-telling
- Giving directions
- Telling a joke or riddle

Group

- Choral poetry
- Sentence pattern drills
- Repetitive songs
- Games
- Puppetry
- Planning together

Exploring other subjects - science social studies, health, etc.

Creative play

V Developing comprehension

Retelling a story

Identifying shapes, colors, numerals, rhyming words

Classifying

Identifying sequence

Making inferences

Making analogies

Interpreting pictures

Following directions

Asking and answering questions

Understanding prepositions

Responding through printed symbols - yes, no

Many exercises for developing these skills are outlined in the *Try* and Frostig manuals. Cuisinaire rods may be used as manipulative devices in concept building exercises.

I Developing visual-motor ability

Reinforcing work in all visual-motor tasks of Level 1

Learning concept of words and matching them

Learning concept of letters and writing them (both small and capital)

Learning concept of numerals (1-5) and making them

Learning number and color words and sorting and matching them with numerals and color swatches

Matching a letter with the first letter in a word

Sorting small and capital letters

Matching small to capital letter

II Developing auditory ability and attention span

Reinforcing work in all auditory tasks of Level R-1

Identifying identical sounds

Hearing initial sounds

Hearing final sounds

Hearing medial sounds

Hearing rhyming words

Hearing syllables

Recognizing short vowel sounds

Role play

Dialogue

Telephone

Introductions

Folk music

III Developing language of instruction. Reinforce all language of instruction of Level Readiness- 1

- Vehicles
- Occupations
- Capitals small letters
- Triangle
- Different, same
- Sound
- Rhyme
- Word
- Syllable
- Compound word
- Sentence
    - statement
    - question
- Line, broken line, underline
- Box, draw a ring around
- Trace
- Greater than, less than
- Many, few
- In front of, in back of

IV Developing oral language

Reinforce all speaking tasks of Level Readiness-1

Individual

- Impromptu talks
- Reporting
- Sentence pattern expansion drill
- Recitation of verse
- Matching pictures according to first sound

Group

- Discussion of picture, object, film, story, etc.
- Role play
- Dialogue
- Telephone
- Introductions
- Folk music

V Developing comprehension

- Reinforcing all comprehension tasks for Level Readiness-1
- Learning concept of words, sentences, syllables
- Recognizing word order in sentence as clue to meaning
- Understanding compound words
- Recognizing that similar sounding words have different referents.
- Using two ideas in a complete sentence

Recalling sequence of events

Associating spoken word with pictures

Supplying missing words to complete a sentence

Playing "Rigamarole"

Dictating a story

Responding by underlining and circling

Following two step directions

Many exercises for developing these skills are outlined in the Try and Frostig manuals. Cuisinaire rods may be used as manipulative devices in concept building exercises.

Minimum Skills Chart for Reading and Writing of English

Scope and Sequence

Chart 1

PHONOLOGY	Levels:	1			2			3			4			5			6			7			8		
Sounds	Spellings & Examples	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
/i/	i : hit	x	x			x				x			x			x			x			x			x
	y : gym				x				x				x			x			x			x			x
/e/	e : red	x	x			x				x			x			x			x			x			x
	ea : dead				x				x				x			x			x			x			x
/a/	a : cat	x	x			x				x			x			x			x			x			x
/u/	u : but	x	x			x				x			x			x			x			x			x
	o : son							x	x				x			x			x			x			x
/o/	o : top	x	x			x				x			x			x			x			x			x
	a : far	x				x				x			x			x			x			x			x
/ī/	i : spider	x	x			x				x			x			x			x			x			x
	VCe : line	x	x			x				x			x			x			x			x			x
	ie : die				x				x				x			x			x			x			x
	y : try				x				x				x			x			x			x			x
	VCe : type				x				x				x			x			x			x			x
	igh : high				x				x				x			x			x			x			x
/ē/	e : recent	x	x			x				x			x			x			x			x			x
	VCe : these	x	x			x				x			x			x			x			x			x
	ee : deed	x	x			x				x			x			x			x			x			x
	ea : heat				x				x				x			x			x			x			x
	ie : chief				x				x				x			x			x			x			x
	ei : receive				x				x				x			x			x			x			x
	y : candy	x	x			x				x			x			x			x			x			x
	ey : valley				x				x				x			x			x			x			x
/ā/	a : paper	x	x			x				x			x			x			x			x			x
	VCe : safe	x	x			x				x			x			x			x			x			x
	ai : wait				x				x				x			x			x			x			x
	ay : play				x				x				x			x			x			x			x
	ei : vein				x				x				x			x			x			x			x
	eigh : eight				x				x				x			x			x			x			x

PHONOLOGY	Levels:	1			2			3			4			5			6			7			8		
ounds	Spellings & Examples	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
/ū/	u : music	x	x			x				x			x			x			x			x			x
	VCe : June	x	x			x				x			x			x			x			x			x
	oo : root	x				x				x			x			x			x			x			x
	ew : few				x				x				x			x			x			x			x
	ue : due				x				x				x			x			x			x			x
	o : to	x				x				x			x			x			x			x			x
/ō/	o : open	x	x			x				x			x			x			x			x			x
	VCe : lone	x	x			x				x			x			x			x			x			x
	oa : goat				x				x				x			x			x			x			x
	ow : slow				x				x				x			x			x			x			x
	oe : hoe				x				x				x			x			x			x			x
/ꝏ/	oo : look	x				x				x			x			x			x			x			x
	u : push	x				x				x			x			x			x			x			x
/ou/	ou : out				x				x				x			x			x			x			x
	ow : cow				x				x				x			x			x			x			x
/oi/	oi : oil				x				x				x			x			x			x			x
	oy : toy				x				x				x			x			x			x			x
/au/	au : haul							x			x					x			x			x			x
	aw : saw							x			x					x			x			x			x
	a : ball	x				x				x			x			x			x			x			x
	o : long	x				x				x			x			x			x			x			x
	ough : fought							x			x					x			x			x			x
	augh : caught							x			x					x			x			x			x
/ə/	i : stir	x				x				x			x			x			x			x			x
	e : her	x				x				x			x			x			x			x			x
	ea : learn	x				x				x			x			x			x			x			x
	u : burn	x				x				x			x			x			x			x			x
	a : beggar	x				x				x			x			x			x			x			x

Chart 1 - p. 3

PHONOLOGY	Levels:	1			2			3			4			5			6			7			8		
Sounds	Spellings & Examples	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
/əl/	le : circle	x				x				x			x			x			x			x			x
	al : legal				x				x				x			x			x			x			x
	el : travel				x				x				x			x			x			x			x
	ul : beautiful				x				x				x			x			x			x			x
	ile : fertile							x				x				x			x			x			x
	il : april							x				x				x			x			x			x
/ən/	en : frozen	x				x				x			x			x			x			x			x
	an : Indian	x				x				x			x			x			x			x			x
	ain : mountain				x				x				x			x			x			x			x
	in : robin				x				x				x			x			x			x			x
/p/	p : pie	x	x				x			x			x			x			x			x			x
	p : rip	x	x				x			x			x			x			x			x			x
	pe : ripe	x	x				x			x			x			x			x			x			x
/t/	t : ten	x	x				x			x			x			x			x			x			x
	t : but	x	x				x			x			x			x			x			x			x
	te : date	x	x				x			x			x			x			x			x			x
	ed : jumped	x	x				x			x			x			x			x			x			x
/k/	k : kit	x	x				x			x			x			x			x			x			x
	k : look	x	x				x			x			x			x			x			x			x
	ck : lick	x	x				x			x			x			x			x			x			x
	ke : like	x	x				x			x			x			x			x			x			x
	ch : Christmas							x				x				x			x			x			x
	c : before: a,o,u,l,& r	x	x				x			x			x			x			x			x			x
/b/	b : bed	x	x				x			x			x			x			x			x			x
	b : tub	x	x				x			x			x			x			x			x			x
	be : tube	x	x				x			x			x			x			x			x			x
/d/	d : do	x	x				x			x			x			x			x			x			x
	d : rid	x	x				x			x			x			x			x			x			x
	de : ride	x	x				x			x			x			x			x			x			x
	ed : rained	x	x				x			x			x			x			x			x			x

Chart 1 - p. 4

PHONOLOGY	Levels:	1			2			3			4			5			6			7			8		
Sounds	Spellings & Examples	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
/g/	g : got	x	x				x			x			x			x			x			x			x
	g : beg	x	x				x			x			x			x			x			x			x
	gue : league										x				x				x			x			x
/j/	j : jet	x	x				x			x			x			x			x			x			x
	g : before e,i,y							x				x				x			x			x			x
	dge : budge							x				x				x			x			x			x
	ge : cage							x				x				x			x			x			x
/f/	f : fun	x	x				x			x			x			x			x			x			x
	ph : phrase							x				x				x			x			x			x
	ff : stuff	x	x				x			x			x			x			x			x			x
	fe : life	x	x				x			x			x			x			x			x			x
	f : beef	x	x				x			x			x			x			x			x			x
	ph : paragraph							x				s				x			x			x			x
/v/	v : very	x	x				x			x			x			x			x			x			x
	ve : save	x	x				x			x			x			x			x			x			x
/s/	s : say	x	x				x			x			x			x			x			x			x
	c : before e,i,y				x				x				x			x			x			x			x
	ss : glass	x	x				x			x			x			x			x			x			x
	s : bus	x	x				x			x			x			x			x			x			x
	se : case	x	x				x			x			x			x			x			x			x
	ce : rice							x				x				x			x			x			x
/z/	z : zoo	x	x				x			x			x			x			x			x			x
	zz : buzz	x	x				x			x			x			x			x			x			x
	se : rose	x				s				x			x			x			x			x			x
	ze : sneeze							x				x				x			x			x			x
/ch/	ch : chin	x				x				x			x			x			x			x			x
	tch : witch	x				x				x			x			x			x			x			x
	ch : reach	x				x				x			x			x			x			x			x
/sh/	sh : ship	x				x				x			x			x			x			x			x
	sh : push	x				x				x			x			x			x			x			x
	t : nation							x				x				x			x			x			x
	s : fission							x				x				x			x			x			x
	ch : chevron										x				x				x			x			x

Chart 1 - p. 5

PHONOLOGY	Levels:	1			2			3			4			5			6			7			8		
Sounds	Spellings & Examples	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
/zh/	z : azure													x				x				x			x
	s : invasion							x				x				x			x			x			x
	ge : rouge																x				x				x
/r/	r : run	x	x				x			x			x			x			x			x			x
	wr : wrist							x				x				x			x			x			x
	r : car	x	x				x			x			x			x			x			x			x
	re : care	x	x				x			x			x			x			x			x			x
	rh : rhyme										x				x				x			x			x
/l/	l : lose	x	x				x			x			x			x			x			x			x
	ll : pill	x	x				x			x			x			x			x			x			x
	le : smile	x	x				x			x			x			x			x			x			x
	l : fail	x	x				x			x			x			x			x			x			x
/m/	m : move	x	x				x			x			x			x			x			x			x
	m : Sam	x	x				x			x			x			x			x			x			x
	me : same	x	x				x			x			x			x			x			x			x
	mb : tomb										x				x				x			x			x
/n/	n : nose	x	x				x			x			x			x			x			x			x
	gn : gnaw							x				x				x			x			x			x
	kn : know							x				x				x			x			x			x
	n : pin	x	x				x			x			x			x			x			x			x
	ne : pine	x	x				x			x			x			x			x			x			x
/ng/	ng : strong	x				x				x			x			x			x			x			x
	n : trunk							x				x				x			x			x			x
/th/	th : thick	x				x				x			x			x			x			x			x
	th : path	x				x				x			x			x			x			x			x
/~~th~~/	th : then	x				x				x			x			x			x			x			x
	th : smooth	x				x				x			x			x			x			x			x
	the : bathe							x				x				x			x			x			x
/y/	y : you	x	x				x			x			x			x			x			x			x
	u:/yū/: use	x	x				x			x			x			x			x			x			x
/w/	w : will	x	x				x			x			x			x			x			x			x
	o:/wu/: one	x				x				x			x			x			x			x			x
	qu:/kw/: quick				x				x				x			x			x			x			x
/h/	h : hat	x	x				x			x			x			x			x			x			x
/hw/	wh : when	x				x				x			x			x			x			x			x

Minimum Skills for Reading and Writing of English

Scope and Sequence Chart 2

MORPHOLOGY Levels:	1			2			3			4			5			6			7			8		
Inflectional Morphemes Spellings	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
NOUNS																								
plurals -s /s/: hats	x				x				x			x			x			x			x			x
/z/:roses	x				x				x			x			x			x			x			x
-es: after s, ch, sh, ss, & x	x				x				x			x			x			x			x			x
Cy to i + es: cities				x				x				x			x			x			x			x
f to v + es: calves				x				x				x			x			x			x			x
vowel change: men				x				x				x			x			x			x			x
no change : deer				x				x				x			x			x			x			x
possessives																								
's : girl's							x				x				x			x			x			x
' : girls'							x				x				x			x			x			x
VERBS																								
present-s/s/:hopes	x				x				x			x			x			x			x			x
/z/: plays	x				x				x			x			x			x			x			x
-es/ z/:chases	x				x				x			x			x			x			x			x
Cy to i +es/z/:flies				x				x				x			x			x			x			x
past																								
-ed/d/ : rained				x				x				x			x			x			x			x
/t/ :slipped				x				x				x			x			x			x			x
/ed/: patted				x				x				x			x			x			x			x
participle																								
-ed (as above)				x				x				x			x			x			x			x
-ing																								
-ing : flying				x				x				x			x			x			x			x
doubling: stopping				x				x				x			x			x			x			x
dropping: hoping				x				x				x			x			x			x			x
ADJECTIVES																								
comparative																								
-er : bigger				x				x				x			x			x			x			x
superlative -est: laziest				x				x				x			x			x			x			x

Chart 2 - p. 2

MORPHOLOGY Levels:	1			2			3			4			5			6			7			8		
Derivational Morphemes Spellings	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
NOUN																								
-er(-ar,-or):helper	x				x				x			x			x			x			x			x
-ness : goodness																			x				x	
-ful : cupful													x				x				x			x
ex- : ex-president																			x				x	
-ence(-ance):insistence																			x				x	
-ment : government																			x				x	
-cy : piracy																			x				x	
-ion : action							x				x				x			x			x			x
VERB																								
un- : untie							x				x				x			x			x			x
be- : becalm							x				x				x			x			x			x
-en : darken													x				x				x			x
re- : redo																			x				x	
ADJECTIVE																								
-ly : friendly													x				x				x			x
-ful : careful													x				x				x			x
-less : friendless																			x				x	
un- : unhappy																			x				x	
-y : sandy	x				x				x			x			x			x			x			x
-en : wooden													x				x				x			x
in-(im-,ir-,il-):impossible																			x				x	
-able : thinkable																			x				x	
-ent(-ant):insistent																x				x				x
-ic : angelic																			x				x	
-al : natural																			x				x	
-ical : spherical																			x				x	
ADVERB																								
-ly : sweetly										x				x				x			x			x
-ward : homeward										x				x				x			x			x

Minimum Skills Chart for Reading and Writing of English

Scope and Sequence

Chart 3

SYNTAX Levels:	1			2			3			4			5			6			7			8		
Sentences - Examples	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
Kernel : S→ NP + VP	x	x			x			x			x				x			x			x			x
John washed the car																								
Transformations (simple)																								
Single base:																								
Question: Did John wash the car?																x				x			x	
Negative: John didn't wash the car.													x				x			x			x	
Affirmation: John did wash the car.													x				x			x			x	
Passive: The car was washed by John.																			x				x	
Double base (complex - matrix insert)																								
Relative: The car that John washed was a Ford.																x				x			x	
Recursive: John and Julia do the washing.																x				x			x	
Deletion: The car John washed was a Ford.																			x				x	
Noun modifier: The crying boy was John.																			x				x	
Possesive: John's car was a Ford.										x				x			x			x			x	
deletion: The car was John's.										x				x			x			x			x	
Compounding	x				x			x			x			x			x			x				x
Kinds of Sentences																								
Declarative	x	x			x			x			x				x			x			x			x
Imperative							x				x			x			x			x				x
Interrogative	x	x			x			x			x			x			x			x				x
Exclamatory							x				x				x			x			x			x

Minimum Skills Chart for Reading and Writing of English

Scope and Sequence

Chart 3 - p.2

SYNTAX Levels:	1			2			3			4			5			6			7			8		
Functions	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
Subject→ N.P.	x				x			x			x			x			x			x			x	
Predicate→ V.P.	x				x			x			x			x			x			x			x	
Noun Phrase functions																								
Subject	x				x			x			x			x			x			x			x	
Object of verb	x				x			x			x			x			x			x			x	
Object of preposition	x				x			x			x			x			x			x			x	
Complement	x				x			x			x			x			x			x			x	
Verb Phrase function																								
Predicate	x				x			x			x			x			x			x			x	
Prepositional Phrase functions																								
Adverbial																								
Place	x				x			x			x			x			x			x			x	
Manner													x				x			x			x	
Time																x				x			x	
Adjective functions																								
Complement	x				x			x			x			x			x			x			x	
Noun Phrase modifier													x				x			x			x	
Adverb functions																								
Place	x				x			x			x			x			x			x			x	
Manner				x				x			x			x			x			x			x	
Time																x				x			x	

Minimum Skills Chart for Reading and Writing of English

Scope and Sequence

Chart 3 - p.3

SYNTAX Levels:	1			2			3			4			5			6			7			8		
Structures	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
Noun Phrase																								
Noun																								
Common_ count	x				x			x			x			x			x			x			x	
noncount																			x				x	
Proper	x				x			x			x			x			x			x			x	
Pronoun																								
Personal	x				x			x			x			x			x			x			x	
Indefinite				x				x			x			x			x			x			x	
Relative																x				x			x	
Reflexive																						x		
Determiner																								
Article																								
Definite	x				x			x			x			x			x			x			x	
Non-definite				x				x			x			x			x			x			x	
Null	x				x			x			x			x			x			x			x	
Demonstrative							x				x			x			x			x			x	
Quantifier																x				x			x	
Numbers				x				x			x			x			x			x			x	
Possessives								x			x			x			x			x			x	
Verb Phrase																								
Verb																								
Transitive	x				x			x			x			x			x			x			x	
Intransitive	x				x			x			x			x			x			x			x	
Be	x				x			x			x			x			x			x			x	
Auxiliary	x				x			x			x			x			x			x			x	
Tense - present	x				x			x			x			x			x			x			x	
past				x				x			x			x			x			x			x	
Modal													x				x			x			x	
be + ing													x				x			x			x	
have + participle													x				x			x			x	
Particle																			x				x	
Adjective	x				x			x			x			x			x			x			x	
Adverb	x				x			x			x			x			x			x			x	

Minimum Skills Chart for Reading and Writing of English

Scope and Sequence

Chart 4

WORD ANALYSIS Levels:	1			2			3			4			5			6			7			8		
	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
Decoding and encoding multisyllabic words with familiar patterns	x				x			x			x			x			x			x			x	
Syllabication	x																							
Patterns																								
VD/CV but/ton							x				x			x			x				x			x
/Cle bu/gle							x				x			x			x				x			x
VC/CV nap/kin, pam/phlet							x				x			x			x				x			x
V̄/CV o/pen										x				x			x				x			x
VC/V plan/et										x				x			x				x			x
V/V li/ar										x				x			x				x			x
pre/fix//base//suffix in/ter/de/pend/ent																			x				x	
Stress																								
1st(/)													x				x			x				x
2nd(^) tel̂•e•gráph•ìc													X				x			x				x
3rd(\\)																x				x				x
weak (no mark) a brâve cówbòy																			x				x	
Respelling /shúg•ər/																x				x			x	
Dictionary Usage							x				x			x			x			x				x
Semantics																								
Multiple Meanings	x				x			x			x			x			x			x			x	
Contractions				x				x			x				x			x			x			x
Abbreviations				x				x			x			x			x			x			x	
Compounds	X				x			x			x			x			x			x			x	
Synonyms				x				x			x			x			x			x			x	
Antonyms				x				x			x			x			x			x			x	
Homophones				x				x			x			x			x			x			x	
Heteronyms										x				x			x			x			x	
Denotation - connotation																x				x			x	
Etymology																			x				x	

Minimum Skills Chart for Reading and Writing of English

Scope and Sequence

Chart 5

GENERAL SKILLS Levels:	1			2			3			4			5			6			7			8		
	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
Comprehension																								
Recalling Sequence	x				x			x			x			x			x			x			x	
Dramatizing	x				x			x			x			x			x			x			x	
Word meaning from context	x				x			x			x			x			x			x			x	
Classifying	x				x			x			x			x			x			x			x	
Following written directions	x				x			x			x			x			x			x			x	
Skimming for information										x				x			x			x			x	
Summarizing																								
5 "W's"	x				x			x			x			x			x			x			x	
Main Ideas	x			x				x			x			x			x			x			x	
Supporting details							x				x			x			x			x			x	
Study reading																								
SQR							x				x			x			x			x			x	
SQ3R																x				x			x	
SQ4R																			x				x	
Answering 3 levels of questioning																								
1. Fact	x				x			x			x			x			x			x			x	
2. Interpretation										x				x			x			x			x	
3. Inference																x				x			x	
Speed																								
Word flash cards	x	x			x			x																
Phrase flash cards				x				x			x			x			x			x			x	
Elimination of:																								
lip reading	x			x				x			x			x			x			x			x	
finger tracing	x			x				x			x			x			x			x			x	
head swinging	x			x				x			x			x			x			x			x	
Timed exercises										x				x			x			x			x	

Minimum Skills Chart for Reading and Writing of English

Scope and Sequence

Chart 5 - p.2

GENERAL SKILLS Levels:	1			2			3			4			5			6			7			8		
	Introduce	Stress	Maintain	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M	I	S	M
Organization																								
Outlining							x				x			x			x			x			x	
Notetaking																			x				x	
Recognizing Structure																								
Key words in sentences																x				x			x	
Paragraph types																								
1. Illustration										x				x			x			x			x	
2. Time or space order										x				x			x			x			x	
3. Step order										x				x			x			x			x	
4. Explanation																x				x			x	
5. Comparison																x				x			x	

READING SUGGESTIONS

1. Use Gattegno's Words in Color techniques (the Silent Way) for introducing and developing phonology.
2. Use Palo Alto Reading Program (a linguistic series) - Harcourt, Brace & World, Inc. for semantic and syntactic pattern development in levels 1 - 3 (Basic).
3. Use several supplementary series that are linguistically controlled, i.e. Harper-Row, Lippincott, Miami, and Sullivan, especially at the preprimer, primer and first levels.
4. Use skills oriented materials at levels 4 - 8 as well as plenty of content readers. The following list marked A has heavy skills work. Those marked B are primarily content centered.

A + B.	S.R.A. Reading Laboratory
B	S.R.A. Pilot Library.
A + B	Reader's Digest Skill Builders
A + B	S.R.A. Kaleidoscope of Skills
A + B	Macmillan Spectrum (2 faceted program - skills and literature)
A + B	Be a Better Reader - Foundation Series Prentice-Hall
A	Advanced Skills in Reading - Macmillan (Levels 7 and 8 only) vocabulary development only.

5. Use Reading Guide for Arizona Elementary Schools for more detailed information on skill's techniques.

SPELLING SUGGESTIONS

1. Words and patterns being stressed in reading and linguistics should be used for study.
2. The "study spelling", or "mastery technique" as outlined in Botel should be presented and insisted upon.
3. Spelling rules and principles as presented in Robert's English series should be presented and mastered. Discovery technique is the most effective for mnemonic purposes in the initial presentation.
4. Consistent scheduling of spelling work on a Monday, Tuesday, Friday pattern has proven most effective.

    Monday - pattern work
    study spelling

    Tuesday - trial test on list words plus affixes studied so far (self-corrected from teacher presentation on blackboard)

    Friday - sentence dictation including week's words and "demon" of past weeks. (Teacher corrected and errors student "study spelled").

5. Follett's 3140 Important Words - Botel et al could be used for a comprehensive review at levels 7 and 8.
6. Gattegno's Fidel Charts are especially valuable for visual dictation during Monday pattern study.

Using Fidel Charts for Pattern Work in Spelling

Steps:

1. Careful articulation of the articulemes in a word and then blending by the teacher.
2. Visual pattern presented by pointing to appropriate grapheme on Fidel (without naming), breaking timing for articulemes.
3. Children write each articuleme as a slightly spaced unit, saying each as they write. Each word should be presented this way in order to form the list for "study spelling". "Study spelling" words should not be divided, but each articuleme should be mouthed as written.
4. Words missed on pre-test and final test should be student presented on chart and "study spelled" by individual.

THE ABOVE PROCESSES HAVE BEEN DECLARED THE MOST EFFECTIVE BY RECENT RESEARCH.

GRAMMAR AND COMPOSITION SUGGESTIONS

1. Use Robert's English Series (text only) in levels 1- 8 after teacher orientation in complete course. (This series also reinforces the phonology, morphology, general skills and spelling patters.)
2. By the 4th level, build an ever increasing awareness that the paragraph is the building block of the written language and that it can be used to organize both entire subjects and the major parts of subjects. Have students see that paragraph patterns are also composition patterns with a topic paragraph, supporting detail paragraphs, and a conclusion or resolution paragraph. Remember that creative writing must not be the only writing our students do. In these formative years, the skills are best taught through exposition.
3. Teach our students the process of factual thought through ample practice:
    1. gather real material (date)
    2. acknowledge groups of like things and evaluate
    3. make a generalization based on step 2 (reader takes this on faith).
    4. Support the generalization with data gathered in step 1.
    5. Restate your generalization with the added assurance drawn from proof. (Your reader must believe you now.)

HAND WRITING SUGGESTIONS

All teachers should have Alphabet Cards and Handwriting Kits. Noble & Noble.

Suggested Handwriting Sequence for Rough Rock

Writing readiness - stick and geometric figures.

Head Start - simple vowels and consonants (small letters) used in Navajo alphabet + capitals used in first name in manuscript. Use 1 inch ruled imaginary line paper and primary pencils. Observe carefully pencil position, paper position, and proper directional form.

Follow Through - The above + more complex Navajo alphabetic forms needed for beginning reading and capitals. Use 3/4" imaginary line paper and abserve above cautions.

(Kit #1 for above)

Level 1 (for reading and writing of English)

Younger - Present letter forms not found in Navajo and introduce slanted manuscript on 3/4" imaginary line paper and gradually progress to introduction of ½", 1/3 ruled imaginary lines paper for introduction and practice of cursive in second half year - regular pencils.

Levels 2 and 3 - Emphasize rhythmic practice of cursive writing to develop speed as well as form using same paper as above.

(Kit #2 for above)

Phase II - Observe all above criteria using 3/8 ruled paper and stressing (1) size (relative). (2) slant (uniform). (3) shape (width). (4) spacing (within and between words). (5).alignment. (6) style - neatness, clean work, paper margins.

(Kit #2 for above)

Curriculum Guidelines for Mathematics

1969

Prepared by

the Teachers' Committee

of the

Rough Rock Demonstration School

INTRODUCTION

It is recommended that the Cuisenaire colored rods be used as the basis for the Phase I mathematics program.

The information in parentheses refers to Parts, paragraphs, and page numbers in Mathematics with Numbers in Color Book A.

Some concepts such as, the meaning of zero are not taught as such; it is felt that this is picked up as part of the total picture. Therefore, a later edition of this guide may contain a guide to the teaching of such concepts.

Please make any comments, suggestions, experiences, etc. that you feel will aid us. This is not a final draft.

The designation ""elementary school mathematics" gives nominal recognition to the view that mathematics is a unified system of ideas beginning with primitive number classification and extending to highly complex abstractions. This designation lends support to the contention that vertical separation of mathematical ideas into arbitrary levels of education or into specific grade levels may be as disruptive to generalization as is the horizontal division of methematics into isolated mathematical specialties. (Scott, Lloyd Trends in elementary School Mathematics.)

While the Curriculum for Rough Rock is leveled there is no reason why a teacher can not give and take from level to level if he feels the need.

A teacher of the first two levels of Phase II may find it necessary to follow the curriculum as set up for Phase I. While a teacher of level V in Phase I may find it necessary to move into a Phase II level.

Since Phase I and the first two Levels of Phase II will be using the Cuisenaire colored rods, many of the concepts will be learned out of sequence with the suggestdd curriculum of this committee. The teacher will have to use his discretion when this appears to the case.

PHASE I
SCOPE AND SEQUENCE

Follow-Through

Level I

It is recommended that Cusienaire colored rods be used as the basis for the mathematics program in Phase I. However, we feel that they be used only in "free-play" until the second half of the year.

BASIC CONCEPTS	
Idea of greater than	(1,P42, 5-9,
Idea of less than	p44)
One-to-one correspondence	
Cardinal sense of numbers-	(Part III, Book A)
Order of counting numbers	(Rods are model of
Concept of ten	base then system)
Meaning of zero	

OPERATIONS
Counting by 1's, 2's
Writing numerals in sequence

GEOMETRY
Recognition and manipulation of geometric form:
square, triangle, circle, rectangle

MONEY
Pennies, nickels, dimes

TELLING TIME	
Hour and half hour	(Part VII, Book A)

Scope and Sequence

Follow-Through

Level II

BASIC CONCEPTS

- Review
  - Cardinal sense of numbers
  - Idea of greater than
  - Idea of less than
  - Concept of tne
  - Meaning of zero
- Extention of:
  - Order of counting numbers (through 100's)
- New concepts
  - Even and odd numbers
  - Numerals as names for numbers
  - Recognized names for numbers one through ten
  - Place Value
  - Fractions of objects, reading and writing, wholes, halves, thirds, and fourths (20-21, p61 21-28, p73-4

OPERATIONS

- Counting by 1's, 2's, 5's, 10's
- Writing numbers through 100's
- Addition and subtraction
  - Combinations of sums 1 to 10
  - Use of open sentence
  - Writing addition and substraction sentences (PartII Book A)
  - Adding 1 or 0
  - Subtracting 1 or 0
  - Commutative and associative law applied to addition. (11- 19 p 45-47; and others)

$a \pm b \neq c$ $a=b+c$

Follow-Through

Level II (cont.)

GEOMETRY

Recognition of:
- Lines - straight, horizontal, vertical
- Figures - rectangle, square, circle, triangle

Measurements of line segments
- Which is longer (1, p-42; 5-9, p-44)
- Which is shorter

MONEY

Penny, nickel, dime, quarter, half-dollar, dollar

TELLING TIME

Hour, half-hour, quarter-hour

MEASUREMENTS

Dozens, quart, pint
Inch, foot, yard

Middle Phase I

This level is to be used as a transition stage. If pupils are ready for this level before the end of the year in which they start Level II there is no reason why they can not move right into level three.

Level III

BASIC CONCEPTS

Review
- Cardinal sense of numbers (Part V and Part VI Book A)
- Concept of ten
- Meaning of zero
- Even and odd numbers (37-39, p-50)

Extention of
   - Order of counting numbers (through 1000's)
   - Recognizing names for numbers one through hundreds
   - Place value (meaning of hundreds, tens, units)
   - Fractions (20-21, p61; 21-28 p73-74; 28-41; p75-80)
     - reading, writing, position on number line of wholes, halves, thirds, and fourths
     - comparing fractional numbers

New Concepts
   - One more than
   - One less than
   - predicting next number in whole-number sequence

Level III

BASIC CONCEPTS
   - New Concepts (cont.)
     - Least counting number

OPERATIONS
   - Counting by 1's, 2's, 5's, 10's, 100's
   - Writing numbers through 100's
   - Addition and Subtraction
     - Basic combinations
     - Writing examples in horizontal and vertical form to three columns and three-place numbers
   - Multiplication by (Part III, IV, VI, Book A)
     - 0, 1, 2, 3, 4, 5,
     - Commutative property of multiplication

$$a \times b = b \times a \qquad (a \times b) \times c = a \times (b \times c)$$

GEOMETRY
   - Review of Levels I and II
   - Finding perimeter of simple polygons

MONEY
   - Review of Levels one and Level two

TELLING TIME
   - Hour, half-hour, quarter hour, min.

Middle Phase I Level III Cont.

MEASUREMENTS
- Inch, foot, yard, dozen, ½dozen, cup, pint, quart, pound

TEMPERATURE
- Reading the thermometer

Pupils should move into Level IV as soon as they are ready.

Middle Phase I

Level IV

BASIC CONCEPTS
- Review of Levels I - III
- Extention of
  - Place value (meaning of ten- thousands, thousands hundreds, tens, units)
  - Recognizing names for numbers one through ten-thousands)
  - Writing names for numbers one through ten thousands
  - Idea of base ten

New Concepts
- Sets of multiples
- Set of equivalent fractional numbers
- Ordinal use of numbers
- Fractional number sequence (Book A, p-61, p-73-74)
- Meaning of multiplication
- Meaning of division
- Expanded numerals
- Pattern for rounding to nearest hundred

OPERATIONS
- Counting by 1's, 10's, 100's, 1000's
- Addition and subtraction
  - Review of Levels I and II
  - No limits on types of computation
  - Subtraction as an inverse operation

Middle Phase I Level IV Cont.

- Multiplication
  - Complete Basic Facts
  - Commutative property of multiplication
  - Associative property of multiplication

$$(a \times b) \times c = a \times (b \times c)$$

  - Distributive property of multiplication

$$a(b + c) = ab + ac$$

  - Division
    - by 1, 2, 3, 4, 5
  - Terms and symbols of the four processes
  - Simple order of operations

GEOMETRY
- Find perimeter of simple polygons, by direct investigation
- Measuring lengths of lines

MEASUREMENTS
- Review
- Following written directions

Upper Phase I

Level V

BASIC CONCEPTS
- Review of Levels III and IV
- Extention of New Concepts in Level IV

OPERATIONS
- Addition and subtration
  - No limits on types of computation
- Multiplication
  - Two digit numbers by two digit numbers

Upper Phase I Level V Cont.

- Review of
  - Commutative, associative, and distributive properties of numbers
- Division
  - Basic facts
  - As inverse of multiplication
  - One place division
  - Long division form
- Prime Numbers
- Equations and open sentences
  - Use of frames or boxes
  - One or two variables
  - Combinations of processes
- Fractions
  - counting by fractions

GEOMETRY

- Measuring lengths of lines
- Recognition of shapes: square, rectangle, triangle circle, parallelogram, trapezoid, types of triangles
- Perimeters of polygons by investigation
- Areas of squares and rectangles informally by investigation of arrays of squares

PHASE II

SCOPE AND SEQUENCE

LEVEL I

BASIC CONCEPTS

- Review of Phase I as needed
- Reading and writing numerals through millions
- Rounding off to nearest 10, 1000, 1000
- Prime numbers - their nature and use
- Factors
- Practions
    - Review of Phase I as needed
    - 2/2, 3/3, 4/4, etc., as names for 1
    - Common fractions and mixed numbers as position on number line
    - Equivalent forms of fractions
        - use of a form of 1 as an identity element

OPERATIONS

- With whole numbers
    - Addition and subrattion
        - Subtraction as inverse of Addition
        - Zero as identity element
    - Multiplication
        - Extension of commutative, associative and distributive properties
        - No limit on size of numbers
        - One as identity element
    - Division
        - As inverse of multiplication

LEVELS I (cont'd)

OPERATIONS

- Division (cont'd)
    - Remainders as fractions
    - To three-place divisors
    - No division by zero
- With fractions
    - Addition and subtraction
        - With like denominators
        - With unlike denominators
        - Of mixed numbers
    - Multiplication
- With signed numbers
    - As position on the number line
    - Addition and Subtraction on the number line
- Equations and open sentences
    - Extensive use with one variable
    - Combinations of processes
    - Predicting next number in whole-number sequence
    - Predicting next number in fractional - number sequence
- Greatest Common Factor
- Least Common Multiple

DECIMAL NUMBERS

- Use of place value in writing numbers
- Relation to position of the number line
- Addition and subtraction

GEOMETRY

- Lines
  - Intersection
  - Segments
  - Points on a line
  - End points of a line segment
  - Parallel lines
  - Perpendicular lines
- Angles
  - Right angles
  - Angles greater than right angles
  - Angles less that right angles
- Square and rectangle
  - Perimeter as length of line
  - Area as number of squares
- Develop formulae for perimeter and area
- Circle
  - Shape
  - Radius, diameter, arc
  - Measurement by degrees
- Cube
  - The number and nature of its faces

WORD PROBLEMS

- One and two-step problems applying all processes studied

BASIC CONCEPTS

- Review of Level I an needed
- Use of exponents to express numbers
- Rational numbers (introduction)

OPERATIONS

- Whole numbers
  - All processes
- Fractions
  - Review addition, subtraction, and multiplication
  - Meaning of reciprocla
  - Division of fractions
- Decimals
  - All processes
- Signed numbers
  - Addition, subtraction, multiplication
  - Division as multiplication with a missing factor 9x__=27
- Prime Factor
- Least Common Multiple
- Greatest Common Divisor
- Equations in Proble Solving
  - Inverse operations
  - Solution of linear equations with one variable
  - Use of parenthesis

GEOMETRY

- Review all previously listed items
- Circles
  - Circumference
  - Area
    - as related to a circle
- Triangles
  - Perimeter
  - Area
- Angles
  - Measurement
  - Sum of angles of a triangle and quadrilateral
- Scale Drawing
- Graphs
  - Interpretation
  - Line graphs
  - Of sequences

WORD PROBLEMS

One, two and three-step problems applying all processes studied

BASIC CONCEPTS

Review of Levels I and II as needed

OPERATIONS

- Whole numbers
  - All processes
- Fractions
  - All processes
- Decimals
  - Relationship between common fractions and decimal fractions
  - Decimals to tenthousandths' place
    - All processes
- Signed numbers
  - All processes
- Ratio and Proportion (introduction)
- Per Cent (introduction)

GEOMETRY

- Review of all Levels as necessary
- Circle
  - Review
- Triangles
  - Different kinds
  - Properties of each kind
- Cube
  - Edges
  - Vertices
  - Bases
- Rectangular Prism
- Sphere
  - Hemisphere
  - Great Circle
  - Small Circle

BASIC CONCEPTS

- Review of Levels I, II, III as needed
- Algebra

OPERATIONS

- Whole numbers
  - All processes
- Fractions
  - All processes
- Decimals
  - All processes
- Signed Numbers
  - All processes

- Ratio and Proportion
  - Pairs of multiples
  - Ordered pairs
  - Equivalence of ratios
  - Tests for equivalence
  - Operating with proportions
  - Rate
- Per Cent
  - Percent as a ratio
  - interest
  - discount
  - using proportions to solve per cent
  - Per cents less than 1%
  - Per cents greater than 100%

GEOMETRY

- Review all previously listd items
- Angles
  - Adjacent angles
  - Supplementary angles
  - Complementary angles
  - Vertical angles
- Introduction to Proof
- Constructions
- Investigating solid figures

STATISTICS

- Organization of data
- Frequency tables
- Mode
- Mean
- Median
- Range
- Using graphs

This ends the suggested scope and sequence, since it is a new scope and sequence many changes will have to be made in future years. Please do not be afraid to make comments on this outline.

Sincerely,

The Subcommittee on
Elementary Mathematics

Stephen E. Wallace
Chairman

Curriculum Guidelines for Social Studies

1969

Prepared by

the Teachers' Committee

of the

Rough Rock Demonstration School

PART ONE INTRODUCTION

Most important as the outcome of any curriculum is the development of critical thinking. In social studies this critical thinking should be directed toward solutions to man's problems. Thus the study of man is the basis for this social studies curriculum.

To approach the problems of man a student must (a) question, evaluate, and challenge his environment. (b) He must be able to function intelligently and usefully as an individual within his society. (c) He must be able to identify and define a problem. (d) And must be able to organize to solve the problem by devising a method of attack which should include the elements of the scientific method. (e) He must be able to use the tools and materials available to solve the problem. (f) And finally he must evaluate and challenge his own solution.

The holding of important social concepts by the student will facilitate his struggle with man's problems. The concepts are apart from the skills such as map reading or research techniques. However, in the use of various skills, concepts will be learned such as the concept of distance relationship understood through a map exercise. Each concept will broaden the base for further inquiry and hopefully a spiral of skills, concept learning will ensue. Thus this social studies curriculum is divided into three parts: concepts, skills, and areas of study.

PART TWO

Concepts: The concepts will be divided under three general headings: man's relationship to space, mans relationship to time, man's relationship to man.

I Man's Relationship to Space: understanding man's relationship to all space i.e, the universe, the gallaxies, the solar system, and earth.

- A. understanding directions and distances
- B. understanding the relationships between land masses and water masses
- C. understanding the effect a position on earth has on a society and the effect of the environment on societies and individuals
- D. understanding the theory and function of globes, maps, and various projections

II Man's Relationship to Time

- A. understanding time in terms of the astronomical phenomena.
  - 1. time in the universe
  - 2. time as related to the earth's movement; time zones on the earth, differences in northern and southern hemispheres, day, night, and seasons.
  - 3. understanding calendars
    - 1. time as measured by various calendars
    - 2. structure of current calendar and its short comings.
- B. understanding time in a geological and historical sense.
  - 1. time in the earth's geological periods
  - 2. time in historical periods as related to the procession of man.

C. understanding the impact of the past on man in the present.

III Man's Relationship to Man This portion of the outline is based on Man: A Course of Study, which is a social studies program designed for the intermediate grades by Jerome S. Bruner of the Center for Cognitive Studies at Harvard. It is used because its approach to social studies places man in the center of our study. This seems to be more valuable to concept building and understanding man than the "expanded community" approach.

A. understanding the functions of language
  1. significance of language to man's "humanness", thinking
  2. communication
  3. phenomena and structure of language

B. understanding the social importance of toolmaking
  1. significance of tool use to man's "humanness."
  2. types of tools
    a. sensory expanders or amplifiers
    b. motor expanders or amplifiers
    c. intellectual expanders or amplifiers
  3. how tools have affected man's evolution and how they affect his life now.

C. understanding social organization
  1. structure and patterns of societies
  2. change in societies
  3. continuity based on roles
  4. how the individual functions in societies- exchange- a man trades work and cooperation for protection.
  5. laws, values and mores.

D. understanding the social significance of child rearing.
    1. importance of long childhood of man.
    2. value formation
    3. mastery of skills
    4. how man is shaped by his childhood

E. understanding attempts by societies to explain or represent their world by way of a philosophy or world view.
    1. substance of world views
    2. modes of expression as art, religion, history, philosophy, myths, legends.

PART THREE

It is with reluctance and skepticism that a list of specific levels is included. It is felt that the time to teach social studies skills is that time when the child wants and needs the skill. This is the time when the teacher can capitalize on enthusiasm. This kind of teaching - learning situation is difficult if not impossible to "order" on a chart. However, it is also felt that the exciting teaching situation can be created, and enthusiasm for learning skills can be generated. It is with this in mind that a minimum skills chart is included. It should be clearly understood that this should not limit any teacher or any student who wishes to go beyond the skills at a suggested level.

The Arizona State Social Studies Guide was used, with many modifications, as an aid for the following chart.

I -- Introduce S -- Stress M -- Maintain

Code
A -- Phase I
B -- Lower Phase II
C -- Upper Phase II

Cont. Part Three

I General Skills for Interprepting Social Studies Materials

	I	S	M
A. reading with comprehension in social studies	A	A BC	C
B. evaluating materials as to their relativeness to the problem to be solved	A B	B C	C
C. distinguishing between fact and opinion - identifying persuasive material (propaganda) - analyzing and challenging	A	B C	C
D. developing a vocabulary of social studies' words and their abbreviations	A	A B C	C
E. interpreting pictures, charts, graphs, tables, and cartoons	A	BC	C
F. learning to use reference materials	A B	B C	C
II Skills Aiding in the Study of Man's Relationship to Space -- using maps and globes.			
A. knowing immediate locations	A	A	AB C
B. knowing and using directions	A	B	C
C. using terms of location as, near, far, up, down, above, below,	A	A B	B C
D. using parallels and meridians to find latitudes and longitudes and places on maps and globes	B	B C	C

Cont. Part 3

	I	S	M
E. using different types of maps			
1. simple neighborhood	A	A	A
2. political	A	BC	C
3. geographic	A	BC	C
4. climate	B	BC	C
5. population	A	BC	C
6. natural resources	B	BC	C
7. human resources	B	BC	C
8. highway	A	BC	C
9. atlases	AB	BC	C
10. contour	B	C	C
F. using various projections			
1. globes	A	BC	C
2. polar	B	BC	C
3. Mercator	B	BC	C
4. others	B	C	C
G. finding own position on maps and globes	A	A BC	C

H. recognizing and identifying important land and water masses, and abstract geographic location.

	I	S	M
1. continents	A	B	BC
2. oceans	A	B	BC
3. major islands	A	B	C
4. major seas, bays, lakes, rivers	A	B	C
5. countries	A	B	C
6. important world cities	A	B	C
7. states	A	B	C
8. hemispheres	AB	BC	C
9. international dateline	B	C	C
10. longitudes and latitudes	B	C	C
11. equator	A	B	C
12. poles	A	B	C
13. tropics	A	BC	C
14. circles and zones	B	BC	C
I using map legends, keys, scales, symbols	A	BC	C

Cont. Part 3

III Skills Aiding the Study of Man's Relationship to Time.

	I	S	M
A. knowing the facts of earth's rotation			
1. day and night	A	B	BC
2. time zones	B	BC	C
B. knowing the facts of earth's revolution around the sun	A	B	C
C. knowing the causes of seasons	A	B	C
D. knowing geological periods	B	C	C
E. knowing and using current calendar to place events B.C., A.D.	A	BC	C
F. using the vocabulary of the calendar and time as year, decade, century, past, future	A	B	BC
G. using the clock, telling time, A.M., P.M.	A	AB	BC
H. learning in sequence days, months	A	AB	BC
I. translating dates into centuries	B	BC	C
J. dating significant historical events	AB	BC	C
K. using timelines	AB	BC	C

Cont. Part 3

IV Group Work Skills

	I	S	M
A. working in a group as a participator - contributor	A	AB	C
B. working in a group as a leader	AB	BC	C
C. listening to others and isolating the main ideas of the speakers	A	BC	C
D. organizing thoughts and speaking to the group	B	BC	C

V No specific skill will be listed for "Man's Relationship to Man", because all the foregoing skills are to be used is this study. However, this is not to say that we cannot proceed with our study until complete mastery of all skills has been achieved. For as we study man many skills will be learned. Hopefully, there will be a cycle of skills aiding in concept building and, in turn, enthusiasm in the search for concepts will foster a need to master skills. The ultimate outcome should be students well equipped for critical thinking and endowed with a rich understanding of man in all his dimensions.

Part 4

Areas of Study

Phase I

Preschool and Follow Through:
The teachers at these levels will be teaching Navajo Social Living, as their area of study in social studies. The outline that follows the general areas of study will be a helpful guide.

7-8 year olds- 2 groups, starting with the year 69-70 and used on an alternating basis four units are suggested.

69-70
1. Mexico: Survey of the nation, and a Mexican Village in depth.
2. Japan: Survey of the land and people, and a Japanese village.

Alternating Years
3. France: Land and people.
4. Africa: Land and people, village in Lybia in depth.

The teacher may substitute some other country in these same general areas.

9-10 Year olds-2 groups, Study of the U.S.- (taught each year). There should be three parts to this study: (A) overview and survey, (B) intense study of the southwest-this is to establish a sound understanding of the immediate area and surrounding states. (C) in depth study of the industrialized northeast. This is to give a basis for moving into the unit on "man" in Phase II.

Canadao or Latin America couldalso be used as areas of study at this level.

PhaseII 69-70,5 groups ranging from 10-14. All classes will use Man: A course of study.This program studies man asking three basic questions:

(A)What is human about human beings?
(B)How did they get that way?
(C)How can they be made more so?

The study will be broken into five areas: Language, tool-making, social organization, childrearing, and world view.

We will use this course only with the class coming into Phase II after this year. We will use as areas of study in the other levels of Phase II. There is the possibility that the program on "Man" will run two years.

Part Four Cont.

Diné

(A guideline and a suggested sequence for a course of of study on Navajo culture (including the encoding and decoding of the language) whose purpose is making explicit that which has been implicit)

Preschool levels:

niilyáii (that which has been placed)
hot'aah niilyáii (in the sky)
identification of jíhonaa'éí (the sun),
tłéhonáa'éí (the moon), and sǫ' (the stars)

nahasdzaan bikáá niilyáii (on the earth)
nihokáá (on land)
nahokáá' hináanii (creatures that live on land)
naagháii (walkers)
naaldlooshii (four legged) identification
and care of animals
dine' (mankind)
concept of different cultures
diné
health and safety, beauty, physical fitness,
language for structuring of thought
exercise
sensory perception

bááhádzídii (harmful creatures)
identification
naat'a'ii (flyers)
observation and identification
naana'ii (crawlers)
observation and identification

na'atií (small animals)
observation and identification
ch'osh (insects)
observation and identification
nanitse' (plants)
identification and use of beneficial
and harmful plants

nahasd záán bighi' niilyáii (in the earth)
collecting of łeezh (soil), tsé (rock), and
beesh (metals)

diné baniilyáii (given to the Navajos)
diné yikéhgo yigáałii (way of life
fun songs
listening to squaw dance songs
experiencing rhythm
listening to and discussing Grandfather,
Coyote, and Wolf stories

ya'át'eehgo (childhood role in
'iináago na'adá (the good way of life)
respecting elders
caring for younger children
respectful of guests
carrying wood and water
care of hogan
simple food preparation
family relationships

doo yá'át'ée góó na'adá (bad ways)
thinking bad thoughts i.e., taboos

Phase I Levels

niilyáii (that which has been placed

hót'ááh niilyáii (in the sky)
introduction to astronomy

nahasdzáán bikáá niilyáii (on the earth)
nihokáá' (on land)
nahokáá' hináanii (creatures that live on land)
naagháii (walkers)
naaldlooshii (four legged)
Navajo classification of creatures
(see chart) care and raising of
animals

dine'
introduction to other Indian tribes'
cultures

diné
introduction to major
anatomical features
love of life
language for structuring
thought
exercise
physical prowess
using the senses

báá hádzidii (harmful creatures)
identification and discussion

nanise' (plants)
collection, classification and utilization
i.e., cooking, dyes, medicine balance of
nature i.e., conservation

táłtł'aah niilyáii (under water)
identification

Cont. Diné p-4
Phase I Levels

nahasdzáán bighi' niilyáii (in the earth)
identification, classification and utilization of soil, rocks, and metals i.e., making of adobes, tools, and adornments

diné bániilyáii (given to Navajos)
diné yik'ehgo yigáałii (way of life)
songs, prayers, and stories

diné yee hináanii (code of life)
ceremonies i.e., sing, beauty way
enemy way
knowledge of major clans
local economics
local history and geography
local government i.e., chapter

yá'át'ééhgo iináago (the good way)
age groups role in family
respect for nature
helping the family i.e. cleaning, cooking, herding, wood-gathering, wool processing
respect for elders
increased family responsibilities

doo yá' át' ééhgóó na'ada' (the bad way)
ceremonial taboos
sex taboos
thinking bad
doing bad

niilyáii (that which has been placed)
hót'ááh niilyáii (in the sky)
astronomical classification

nahasdzááh bikáá' niilyáii (on the earth)
nihokáá' (on land)
nahokáá' hináanii (creatures that live on land) Navajo classification

- naaghái (walkers)
  - identification and Navajo classification of creatures
- naaldlooshii (four legged)
  - anatomy of animals
- dine'
  - vocational opportunities
  - cultural differences and likenesses
- diné
  - anatomy
  - Navajo ('ana'í) customs and dialects
  - love of life
  - language for structuring
  - thought
  - physical fitness
  - using the mind and senses

- bááhádzidii (harmful creatures)
  - identification and discussion

- nanise' (plants)
  - agriculture, old ways as well as new
  - conservation

nahasdzáán bighi' niilyáii (in the earth)
- geographic concepts
- use of soil, rock, and metals
- for tools, and adornment

diné bániilyą́ii (given to the Navajos)
- diné yikehgo yigáałii (way of life)
  - songs, prayers, stories
- diné yee hináanii (code of life)
  - ceremonies i.e., sing, beauty way, enemy way
  - sacred animals
  - tribal organization, history, and government
  - biographies of leaders
  - Navajo origin (comparative myths in other cultures)
  - history and intricate classification of clans
  - art and music
  - legends and myths

Cont. Diné -6
Phase II Levels

- yá'át'ééhgo iináago (the good way)
  - concept and the doo yá 'átéégóó na'ada' (the bad way) concept explored
    - through current issues such as:
    - trading posts
    - churches, missions
    - education
      - types of schools, school boards. etc.
    - elections
    - peyote
    - businesses, leasing
    - recreation
    - politics
    - economics
    - relocation
    - BIA
    - peripheral dorms
    - range and livestock control
    - boarding school versus day
    - boarding school off reservation
    - clothing
    - Red Power
    - Navajo Youth Organization
    - proposal for a Navajo Young Youth Organization
    - behavior
    - competitive sports
    - alchoholism
    - drugs
    - smoking
    - law and order
    - mental health
    - Navajo customs i,e, dress
    - issue raised by students

Suggestions for implementation of Dine', a course of study in Navajo culture:

1. Keep in mind the basic philosophy of our social studies and language programs remembering as Jerome Bruner says, that we should "rescue the phenomena of social life from familiarity without making it seem primitive or bizarre."
2. Relevant to the third of our three basic social studies questions "How can man be made more human?", it is important to stress to students that the reading and writing of Navajo (the other facet of this course) is of evolutionary import in the continuance of yá' át'ééhgo (the good way).
3. The four most successful techniques for teaching social studies have been found to be:
    1. contrast, i.e., Emergence legend contrasted with that of Christianity and other religions, leading to likenesses as well as differences.
    2. stimulation for the use of informed guessing, or hypothesis making, i.e., "How did the traditional Navajo dress develop?" followed by inquiry and research.

3. participation i.e. grinding corn, making dyes, carding wool, playing string games, arts and crafts.
4. stimulating self - consciousness, bringing to the verbal level an ordering of the students' world i.e., identifying, discussing, collating, and presenting taboos.

4. Units should be constructed using any or all of the four above techniques. Those units most appealing to the students and teachers in a given year and class should be developed, used, recorded, evaluated, and printed.

Part Five: Teaching Suggestions

Suggested Approach for Unit Instruction

The teacher may select a subject or the subject may originate with the class or an individual student. Next the teacher should arouse an interest by discussions, bringing in manipulative things relating to subject, and showing visual things such as pictures or films.

The teacher and the class can then develop a set of questions about the subject to be used as a basis for individualized research. This set of questioned can then be reproduced so all students have a copy.

The teacher must then collect resource materials to be used by the students as they search for the answers. The teacher should see to it that appropriately leveled material is available for all students. A time limit should be set for reports to be completed. All students may not finish all questions. However, if each child has worked to the extent of his ability, his work should be accepted. At this point, other approaches to research can be used. Student committees may study parts of the subject or the teacher can have individuals researching small segments of the subject.

Cont. Part Five

Activities and projects can grow out of the research. Individuals can do bulletin boards. A class may put on a program relating to the subject. Displays, handicrafts, art exhibits, models, and murals are just a few ideas that can be developed. Field trips might evolve or be a planned part of the unit.

Available audio - visual aids should be included in the unit.

As work is completed the teacher and students should begin their evaluation of what was learned. This can be done by a teacher-made test and class discussion of the unit. The teacher should be evaluating the unit as it is in progress to observe individual's changed behavior. It is important that the evaluation is as broad as the unit. All effective units should be printed and filed.

Part Five Cont.

Model Unit Suggested for Intermediate and Upper Elementary

SUBJECT: People of Mesa Verde

I Overview: Study the people of Mesa Verde as they developed from "early man" through the "Great Pueblo Period."

II Objectives: A. Appreciation of the development of man as depicted at Mesa Verde. B. Understanding man's refinement of tools, art, social organization and child rearing. C. Skills: Formulating questions applicable to the study of any culture, research skills, and group work skills.

III Motivation: Suggestion of a field trip to Mesa Verde, bulletin board display of post cards and pictures showing ruins. Show pictures of diaramas that are in the museum.

IV Procedure: The teacher will have to write some materials to give basic information. The books listed under instructional aids will be useful. After interest is established the teacher and class should formulate questions about the people of Mesa Verde such as: Who lived at Mesa Verde? What was their life like? When did they live there? Why did they live there? How did they sustain life? A question sheet can be made up of these questions and others.

Part Five Cont.

Most of the questions should be answered in background reading which the teacher has prepared. Some questions may go unanswered to be researched on the field trip. Specific topics can be assigned to interested and able students to make oral reports. Some topics might be Basketmakers at Mesa Verde, or Methods of Building at Mesa Verde.

When question sheets, reading, and reports are complete the field trip can be planned. The students can help make arrangements as, request the bus, write to the tour center, request lunches and raise money if necessary. A minor but important point is to have the class write thank you notes to those who helped make the trip possible. Conduct on the bus, on the tours, and in the museum should be discussed. A good way to focus on what is to be learned on the trip is to have the class list all the reasons why they want to go to Mesa Verde. A second question sheet can be issued to take along and answer if the teacher feels this would be helpful.

The teacher should schedule the events that he feels will be most valuable. There are several dramatic overlooks on the way to the ruins and a time schedule should be worked out before hand. Highlights should include, tour and talks at Cliff Palace, and Spruce Tree House Ruins, and a tour of the museum. During the trip the teacher should focus attention on specific questions to be answered and general objectives to be met.

After the return to school the teacher should followup the experience with discussions and a writing assignment. Topics might be: "What would it be like to live as a basketmaker at Mesa Verde?" or a general discription of the trip keeping order of events in mind. In the discussion, questions should be answered and any interesting observations related.

Projects can be done at this point. Examples are murals, class art projects, models of dwellings, and diaramas. The children might want to make and use the tools and weapons of the Mesa Verde people such as baskets, pottery, atl-atl, etc. These things can be done by individuals or committees.

V Evaluation: The unit may be ended with an evaluation of the work and experience by the class and the teacher. A final general evaluation discussion with questions and answers can be held. A teacher may prepare a test that asks factual questions as well as inferential questions relating to the objectives.

The teacher's evaluation should encompass areas, such as, social behavior, question formulation, idea organizing, factual material learned. The final question should be "Were the objectives met?" The evaluation should be a continual process for the teacher throughout the operation of the unit and should be as broad as the unit itself.

A unit that the teacher feels was successful should be shared with others. Teachers are asked to put such units on file in the curriculum center.

VI Instructional Aids

Teacher Resource Books:

1. Prehistoric Indians of the southwest
2. Indians of Mesa Verde

Part Five Cont.

Generals sources for teachers and students:

1. Cliff Dwellings of the Mesa Verde
2. The Mesa Verde Museum
3. Color reproductions of diaramas depicting the five stages of development at Mesa Verde are available at the Museum. These have a text on the reverse side which is a good source of general information (at 50¢ a set)
4. A large picture of Cliff Palace is also available at the museum. (at 25¢ each)
5. The teacher may be able to locate slides by local people who have been to Mesa Verde.

Note: This is a sample unit and the format should be altered as a teacher sees fit to meet the needs of his class.

Curriculum Guidelines for the Navajo Language

1969

Prepared by
the Teachers' Committee
of the
Rough Rock Demonstration School

INTRODUCTION

Fluency in any language requires mastery of four basic skills: understanding, speaking, reading and writing. The acquisition of these skills is the goal of this Navajo Language Program. It is a course designed mainly for phase two Navajo students. But it's simple enough that non-Navajos can also follow the program and get a meaningful results from it.

Step One: explains in detail the sound system of Navajo, including the vowels consonants and dipthongs.

Step Two: concentrates on grammatical structures- grammatical explanations are kept to a minimum.

Step Three: discusses in length the Navajo verb.

Step Four: It is this last step that the greatest attention is given. This is the key to the whole program, because here students apply all they have learned. This section concentrates on a program called audio-lingual skills. This approach is based on an entirely "live" approach, emphasizing practical and realistic everyday situations which are immediately meaningful to students. The student learns primarily through pattern practice by means of varied types of excercises, suitable for both choral and individual response.

Verbs and patterns are first throughly drilled in complete sentences and then tested with appropriate questions. "Personalized" questions are intended to involve the student personally.

Original dialogs provide natural and meaningful practice in the audio-lingual skills. Many of the grammatical structures to be studied are first introduced in the dialog.

This audio-lingual program is in units. In later units students are assigned to write an original composition on a given topic in order to develop the skill of writing. An original reading selections have been written for benefit of the students. They present the challenge of literature.

Curriculum Guidelines for Navajo Language

Step one --------an outline of Navajo Alphabet for students and teachers for reference. It describes in detail the vowels, consonants, and the dipthongs. Explains the sound system.

Step two ---------Grammatical Gender

a. Number - In English we express number as singular (one) and plural (more than one). Navajo expresses number as singular (one) , dual (two) and distributive plural (3 or more). Simple explanation of number in Navajo and appropriate exercises to challenge the the students - gives section on pluralizing nouns, adjectives and verbs.

b. Pronouns --- students learned the "pronoun box" given

shí	nihí	danihí
ni	nihí	danihí
bí	bí	daabí

All the Navajo verbs fall into this box students will be able to recognized verbs in any person (1st, and 3rd person) and able to know whether is singular, dual or distributive plural.

Pronouns Cont. B.

An example let's conjugate the verb to sing in present tense.

	Singular	dual	distributive plural
1st person	hashtaał	hwiitaał	dahwiitaał
2nd person	hótaał	hohtaał	dahohtaał
3rd person	hataał	hataał	dahataał

In Navajo, verbs contain within its structure elements indicative of pronominal subject, therefore personal pronouns are not necessary with the verbs as is the case in English. For instance, hastaał = I sing. The verb doesn't need the personal pronoun "shí". In English personal pronoun "I" is necessary to the verb "sing".

C. Possessive Pronouns with nouns prefixed

The section explains series of pronouns that have nouns attached to them. For example:

shitsii'	nihitsii'	danihitsii'
nitsii'	nihitsii'	danihitsii'
bitsii'	bitsii'	dabitsii'

The sections brings out low-toned and high-toned pronoun-noun series. Appropriate exercises to help review the section.

D. Demonstrative Pronouns

Just as in English, Navajo has demonstrative pronouns which is explained in this section. Again students will be able to recognize demonstrative pronouns in sentence sturctures.

Examples:

1. díí = this, those
2. díidí = this very one
3. ńléí = yonder one
4. Kwe'é = right here

Interrogative Pronouns ha'át'íísh, háísh, háágóósh, háádę́ę́' and etc. are also explained in this section. Again appropriate exercises are given for reviewing what was learned in the section.

E. Indefinite Pronouns

Discusses various indefinite pronouns that exists in Navajo such as the following:

1. t'áá háída -----------------anybody
2. t'áá díkwíí ---------------a few
3. t'áá ałtso -----------------all, everybody
4. t'áá ałtsoní ---------------everything

Appropriate exercises to stimulate what has been learned about indefinite pronouns.

F. Nouns

This sections discusses basic nouns in Navajo including constantly possessed nouns pertaining to body parts.

In every section simply rules are brought out to aid the students in their grammatical adventure in Navajo language. Appropriate exercises are included after each section for the students to work out so they can apply what they learned.

G. Suffixes

The section deals with suffixes, in other words, word endings which are attached to first word in a clause, phrase or sentences.

Examples:

1. shą' - sh, - ish (these are interrogative suffixes)
   - a Háísh
   - b. Ha'át'íísh
   - c. Háadishą'
2. - Go ------------ John ayą́ą́go sizį
3. - góó ------------Atiingóó yishááł.
4. - ígíí ------------Ashkii hataałígíí shitsilí át'é
5. - dą́ą́' ------------ Haidą́ą́' nízaadi íínishta' ńt'éé
6. - da ------------ Doo yá'át'ééh da

H. Postpositions:

Postpositions are comparable to English prepositions. This sections mentions most of them and explains them in an sunderstandable way. Appropriate exercises.

Few examples:

a. báhátis ------------ over it
b. bich'i' ------------ to, toward him
c. bighá' ------------- through it
d. bikáá' ------------- over its surface
e. bił --------------- with him

These are used in sentences and students are challenged to recongnized them in sentence structure.

I. The Particles

Particles include all conjunctions adverbs, numerals and etc. This section explains particles in a very understanding way accompanied by appropriate exercises and drills.

Few examples:

a. ániidí ------------ new
b. ałk'idą́ą́' ---------- long ago
c. áłtsé ------------- firstly
d. ałdó' ------------- also, too
e. adą́ą́dą́ą́' ---------- yesterday
f. díí zhíni -------- this summer

The Particles Cont.

Numerals:

1.	t'ááłá'i	10	neeznáá
2	naaki	20	naadiin
3	táá'	30	tádiin
4.	dį́į́'	40	dízdiin
5.	ashdla'	100	neeznádiin

J. Adjectives

This section explains Navajo adjectives as forms of neuter verbs denoting quality, state or condition. There are no forms in Navajo comparable with large, larger, largest to express the positive, comparative and superlative degrees for adjective. Such comparison is accomplished in Navajo by other means as explained in this section. Physical qualities or conditions as size, distance, extension, weight and etc. are also explained in a simple understandable way.

Examples of 3rd person neuter verbal adjectives

a. aszólí ---------light (in weight)
b. áłts'óózí -------- slender
c. deení ----------- sharp
d. dik'á ---------- squared
e. díílíd ---------- burnt

Step Three

Verbs

Verbs in Navajo are discussed in step three. The Navajo verb, unlike English, often contains within its structure not only the verbal idea but also subject and object pronouns, and many adverbial modifiers. It is in itself a complete sentence. Verb tems that classify shape, size and manner of objects are also discussed. Verb tense are also covered such as present, past, and future tense of a verb; a little on transitive and intransitive verbs.

In Navajo there are mainly two different sentence structures involves the personal pronouns because it's always referring to he, they, you, us, or me. These types of sentence structures which involves personal pronouns are called - PRONOUN INCORPORATED WITH THE VERB. In other words, the pronoun is joined in with the verb. For example: Tó ła' nisin ---------I want some water nisin involves both pronoun "I" and verb "want". In English pronoun "I" stands by itself and the verb "want" stands by itself but in Navajo they both go together such as in the verb nisin which means "I want".

Below are some sentences that involve pronoun incorporated with the verb. The underlined words are the pronoun-verb phrases.

Verbs Cont.

The subject is always mentioned first then the action of the people upon it.

a. bááh ła' *nisin* ....*I want* some bread.

b. abe' ła' *nisin* .... *I want* some milk.

c. dibé ła' *nahashniih* ...... *I am buying* some sheep

d. ke ła' *nahashniih* .... *I am buying* some shoes.

e. łį́į́' ła' hanishtá .... *I am looking* for some horses.

f. shimá *hanishtá* .... *I am looking* for my mother.

g. tsídii *yish'į́* .... *I see* a bird

The other type of sentence structure does not involve pronouns but instead nouns usually do the acting on the verbs.

For example:

a. *Níbaal* kin bine'jí *si'ą́*

The *tent* is behind the house *sitting*

b. *Azee'* bikáá'adání bikáá'gi *sinil*

The *medicine* is on the table *sitting*

c. *Béésh* bikáá'adání bikáá'gi *si'ą́*.

The *knife* is on the table *sitting*

d. *Gish* bikáá'adání bikáá'gi *sitą́*

The cane is on the table *sitting*

The first underlined word is the subject and the second underlined word is the verb. These do not involve personal pronouns and thus they are separated - subject from the verb.

Step - 4

Audio - Lingual as discussed in the introduction.

INTRODUCTION

The Rough Rock Demonstration School is under the control and direction of the local people whom it serves. It is they who decide what their children shall learn and who shall teach it. They have decided they want their children to improve their language arts and skills in Navajo, and this is the reason Navajo language is part of the curriculum at Rough Rock.

Much educational research and philosophy suggests that Navajo children ought to develop their arts and skills in their native language. Nevertheless, there are some experts who feel this is not a good idea or worth the time spent on it. But Rough Rock is not run by the experts or their philosophies; it is run by the local people through their school board. Therefore, a lengthy discussion of the philosophy behind bilingual education need not be rehearsed here. The philosophy of bilingual education is readily available elsewhere, and the fact that the local school board has decided in favor of bilingual education is sufficient reason for the inclusion of Navajo language in the school's curriculum.

The major goals of the Navajo language program are as follows:

(1) Vocabulary enrichment and development,

(2) Development of literacy arts and skills,

(3) Development of the arts and skills of oral expression,

(4) Increase understanding of the grammatical parts and structure of Navajo, and

(5) Development of pride in the Navajo language.

The curriculum guide provided here is designed to directly achieve the goals as outlined above.

The following curriculum is divided into twelve (12) divisions. Each division is designed to approximate one year's work for the "average" child. Every child who speaks Navajo as a native speaker, regardless of age, should begin with division one. The child should then proceed through the program as fast as his ability and the teacher's skill will take him.

Three major areas of instruction are covered in the first six divisions, and four major areas of study are included in the last six divisions. The three major areas of instruction in the first six divisions are vocabulary, literacy, and oral expression. It is suggested that the school week be divided up according to the following pattern for the first six divisions of study:

Monday - literacy
Tuesday - vocabulary
Wednesday - literacy
Thursday - oral expression
Friday - literacy

It can easily be seen that the emphasis during the early years of a child is on developing skills in reading and writing. The weekly schedule suggested above attempts to provide a maximum of variety in study and learning so as to maintain the attention and interest of the child as much as possible.

The four major areas covered in divisions 7-12 are vocabulary, literacy, oral expression, and grammar. The following weekly schedule is suggested for divisions 7-12:

Monday - grammar
Tuesday - literacy
Wednesday - vocabulary
Thursday - literacy
Friday - oral expression

In divisions 7-12 a little less time is spent on literacy skills because by this time a child should have a basic mastery of reading and writing skills and should start working toward the literary arts of prose, both creative and expository writing, and poetry.

The study of Navajo grammar is not included in divisions 1-6. A study of simple and basic grammatical concepts begins with division 7 and continues through division 12.

The structure, content, and suggestions for teaching each of the four major areas follow.

I. VOCABULARY

The following subject matter is divided into six divisions, which are to be repeated in a more extensive and intensive manner. For example, a child's first year in school will be devoted to units on domestic animals, Navajo kinship, the world of hogans, and plants. In the child's seventh year or whenever he finishes the first six divisions, he will again study domestic animals, Navajo kinship, the world of hogans, and plants but this second time will be much more intensive and extensive.

As the division is intended to cover a year's work for the average child, each division is divided into four nine-week units. One day a week will be devoted to vocabulary development, so there are nine class periods within each unit. These nine class periods are divided into eight lessons and one review or test period. Prior to the actual subject matter, some suggestions for teaching vocabulary are included.

Suggestions for Teaching

1. A Term is More Than a Name for an Object.

The term for sheep is 'dibe''but dibe' means much more than the four-legged object to which it refers. What does 'dibé' mean to the Navajos? It means food, clothing, rugs, and others things which are part of human subsistence. It means hard work and lots of care and knowledge. Some Navajos say the sheep are one's mother, as they provide a source and subsistence for life. All of these concepts are part of the meaning of 'dibé'. In addition, a lesson on sheep should include a discussion of how to raise sheep, where and what they graze on, why they are treated for ticks and other pests, why they are vaccinated, how to care for a sheep lambing, etc. All of this should be part of the lesson on domestic livestock.

Not all of the above can or should be covered in division one. Only a brief discussion of the subject matter should be included in teaching the first six divisions. Much more and deeper material can be and should be covered in the last six divisions.

2. Make Maximal Use of Visual Aids.

One of the keys to good teaching and rapid learning is the proper and extensive use of visual aids. Live animals are better than pictures, and pictures are better than verbal descriptions. Get the best visual aids possible. Touching is better than just seeing, and seeing is better than just hearing. Let the students interact with the subject matter as much as possible. Without the excellent use of visual aids, the subject matter is likely to be boring, learning will be slow, interest will be low, and discipline will be difficult.

3. Do Research on Subject Matter before Teaching It.

Vocabulary development in the Navajo language is designed to teach the children something they do not already know. Therefore, the teacher must avoid teaching common vocabulary that the children already know. The teacher must go beyond the limits of his and the children's knowledge, and in order to do this the teacher must do research ahead of time with those who have an extraordinary knowledge of plants, animals, rocks, car parts, etc. If the teacher relies only on his own vocabulary in Navajo, it is not likely the children will be taught anything they did not already know.

If the teacher holds up a picture of a cow and tells the children that it is called 'beegashii', little learning will occur and the class will be very trying and difficult for both the students and the teacher. However, if the teacher brings a film of some pictures of various kinds of cattle such as herefore, black angles, long horns, gernseys, jerseys, holsteins, etc., and helps the children discover the names for these various kinds of cattle, a lot of learning will take place. The children should also be taught which cattle are used as beef cattle and which are used as dairy cattle. Examples of the many things made out of cowhide would also be good. The interesting facts that cattle have four stomachs, never sleep, and store their food in a cud should also be part of the discussion. No teacher will know enough about all the subjects he will be teaching to teach without doing previous research.

In some cases, there may not be Navajo terms for various items and concepts not previously known to the Navajo. These cases should be dealt with by developing terms for things and concepts which previously had no Navajo name. The teacher should enlist the help of the students in doing this.

If the Navajo language is to be an effective language for learning and communication, its vocabulary must be developed to deal with items and concepts not previously known to the Navajos. This kind of vocabulary development should be a major part of Navajo language learning at Rough Rock.

4. Be Flexible in Teaching the Material.

The subject matter to be covered in vocabulary development and its division into divisions, units and lessons are nothing more than calculated guesses about how much time should be spent on each area. Experience will likely indicate that the curriculum content and structure will need to be revised. The good teacher will not try to stick too closely to the structure as outlined and will proceed as rapidly or as slowly as the situation suggests. Areas where the children's interest are high should be covered in more detail than where interest is low.

The teacher and the students ought to make their own judgments as to the relevancy of the materials or subject matter covered. It is likely that some important and interesting areas have been overlooked, and that some unimportant and uninteresting areas have been included. The curriculum as outlined herein is designed to provide the teacher with a guide to follow. The teacher should feel free to make minor revisions in it. Major revisions should be made in communication with all other teachers so that everyone knows what the students in each class or group have covered.

5. Vary Approach to Maintain Interest.

The most interesting, exciting and stimulating thing in the world can become boring if done over and over in the same way. The teacher must constantly vary his approach if he is to keep interest high and boredom low. Vocabulary lessons should include various interesting activities such as playing games, drawing, singing, role playing and going on trips. Various kinds of visual aids should be employed.

Another principal way of maintaining interest and increasing learning is to get maximum involvement and participation in the lesson on the part of the children. Let them talk about things, hold things, draw things, etc.

Remember boredom is usually the fault of the teacher, and boredom results in discipline problems. Good teachers can make almost anything interesting. Varying one's approach is an important attribute of any good teacher.

II. SUGGESTIONS FOR THE DEVELOPMENT OF THE SKILLS AND ARTS OF ORAL EXPRESSION

Introduction

The ability to orally express one's ideas, feelings, and needs to others will be extremely important to the students. This is a need in family life, at gatherings, at work, in politics, and elsewhere. Navajo's place a lot of value on one's ability in public speaking and other forms of oratory. This art is one of the important things that is left undeveloped in schools where only English is used. Most students coming from BIA and public schools have extreme difficulty speaking fluently and clearly in Navajo. This should not be true of any student at Rough Rock.

The art of public speaking, so treasured among older Navajos, is greatly impaired by the fact that Navajo students are forced to express themselves in English most of the time. Their insecurity with regard to speaking English tends to keep them silent. The suppression of Navajo then adds to this impairment in oral expression. The result of these experiences is often an insecure child who cannot express his ideas, feelings, and needs and thus becomes alienated from both the Navajo and Anglo worlds. This results in withdrawing and failure to achieve what the child might otherwise have achieved.

One of the goals of the Rough Rock Demonstration School is the enhancement of the self-image of its students. The development of a student's skills in oral expression will certainly contribute greatly to his self-image and feeling of self-adequacy to deal with the world about him.

Every educator gives lip service to the need in education to get students to think and resolve problems. Language is closely related to thought, and one's abilities to use language closely parallels one's ability to think and to reason. Forcing Navajo children to express themselves only in English and failing to develop the language arts in Navajo greatly impairs the child's capacity to think, to reason and to solve problems.

Speaking forces one to think, and speaking well, compels one to think well. Because thinking and speaking are so important to every aspect of a child's emotional, social and intellectual development, these arts should be developed in the child's native language. The same skills and arts will develop more rapidly in English once they are developed in Navajo.

1. Oral Reports to Class.

The development of oral expression begins in simple conversation and advances to the highest arts of drama and public speaking. Every person has some fears and insecurities about his ability to express himself in front of others. He fears he might make a fool of himself or be criticized. Every teacher faces this problem in getting children to speak. To overcome this, the teacher should try to get children to speak about things they really want to tell others. Having children give oral reports to the class about things which interest them most can help overcome this. They can report about what they did on the weekend, about their pet lamb, or their favorite horse, etc.

2. Public Speaking Contests in Navajo.

There have become many speech contests on the reservation in English but none in Navajo. Rough Rock ought to start public speaking contests in Navajo within every classroom, across various phases and within the entire school. This should then advance to competition with students from other schools. Parents would be brought in to be judges in these contests.

3. Plays and Programs in Navajo.

The art of expression reaches one of its highest degrees in drama. Every Thanksgiving and Christmas Navajo students put on a program for their parents in English. This ought to be changed. The programs ought to be put on in Navajo, as well as other programs and plays during the year. These should begin with short skits in Navajo in each classroom and advance to more public performances.

4. Radio Announcing.

As an interesting and fun way of getting the children to express themselves in Navajo, the teacher could get some cheap radio equipment and let the children take turns at announcing while the others listen.

5. Practice Interpreting.

The art of interpreting is greatly needed on the reservation and children should begin developing this art in their upper years at Rough Rock. This can be practiced and developed in the classroom.

6. Singing.

Singing is another one of the arts of oral expression. Children should develop this art in Navajo. They should learn numerous Navajo songs, as well as be encouraged to make up their own songs. Parents should be brought in to help teach songs, too.

7. Conversation over Electronic Devices.

More and more in the modern world, the art of conversation over the telephone or other electronic device is becoming important. The teacher should get some walkie-talkies or other kind of device over which the children can practice talking to each other. Contests should be started to see who can best communicate certain ideas or information across the electronic device.

8. Invite Guest Speakers to Speak to the Class.

In order to develop an art, or skill, the child needs a role model to imitate. The teacher should invite some of the best speakers in the local community to come to the classroom and speak to the children. The class might also take trips to meeting where various people are speaking in public.

9. Have Students Make Tape Recordings.

Students can practice and develop the art of oral expression by speaking into a tape recorder and then listening to what they said and evaluating it. Students who are reluctant to speak into a tape recorder, and then have the tape played in front of the class. There are many ways in which a tape recorder can be used successfully in developing the arts of oral expression.

10. Storytelling.

The art of storytelling is highly valued in Navajo society. Navajo students should be exposed to good storytellers, and should take their turn at storytelling.

11. Puppet Shows.

Sometimes children who are reluctant to speak by themselves find it satisfying to speak through puppets. The children would put on puppet shows for each other, and learn to speak through puppets.

12. Vary Approach.

As always a teacher should vary his approach as much as possible. A few suggestions have been listed here. Every teacher should look for more and include them here later, so that this curriculum guide can be an abundant source of ideas.

III. SUGGESTIONS FOR THE DEVELOPMENT OF THE LITERARY ARTS IN NAVAJO

Introduction

One thing that has been lacking in traditional Navajo culture and in most Navajo schools is the arts of reading and writing in the Navajo language. These arts are not to be ignored at Rough Rock. They will require a good deal of time and attention to develop but the results will be worth the efforts.

If the Navajo language is to be an effective instrument for communication and learning in the modern world, it will have to become a written language with numerous Navajos literate in their own language.

The following ideas are suggestions which the teacher might employ in teaching reading and writing. They are designed for students past the primary years. The students in the primary grades should have a sequenced and complete program for early reading and writing.

1. Reading Aloud.

Reading aloud is probably the most common method in teaching reading but it is nowhere near the best. It should be used sparingly by the good teacher.

2. Reading Silently.

Students should be encouraged to read to themselves, and both oral and written tests should be given them to see how well they comprehended what they read.

3. Writing What They Hear.

Students should listen to a story, speech, or tape recording and then be asked to write down what they heard. This is a difficult task and should be challenging for older students.

4. Write Stories.

Students should be encouraged to write short or long stories about themselves, their family, their friends, their animals, class trips or any thing that interests them.

5. Utilize All Written Materials in Navajo.

Because of the great shortage of written materials in Navajo, the teacher should try to obtain and utilize all possible materials written in Navajo. In addition, the teachers and the students should develop their own materials and share these across classrooms.

6. Read Their Own Stories.

The students could write short stories and then exchange them, reading each other's stories before the class or silently.

7. Picture Stories.

The teacher hold up a picture or sequence of pictures and the students could write down what they see in the picture or pictures. Then they could read to each other what they have written for comparison.

8. Letter Writing.

Students should be encouraged to write letters in Navajo. Class time should be used for writing letters, and impersonal letters might be graded and read to the class.

9. Transcribe Tape Recordings.

A challenging exercise for advanced students would be transcribing tape recordings.

10. Essay Contests.

The teachers should conduct essay contests in Navajo within their classrooms and across the entire school. Rough Rock might also sponsor reservation wide essay contests in Navajo to encourage the development of Navajo literacy.

11. Games.

There are many games which can be played to add to the interest and fun of learning to read and write Navajo. Word games such as scramble could be played with the Navajo alphabet. Games where one of three words is misspelled could be played to see who can pick out the misspelled word most accurately.

12. Correcting Incorrect Writing and Words.

A good activity to help in spelling is to give students written material with misspelled words in it, allowing them to try to correct the misspelled words.

IV. NAVAJO GRAMMAR

Grammar is a non-Navajo way at looking at the Navajo language. Most grammars of various languages take off from Latin grammar. The basic concepts and ideas of Latin grammar have been developed and expanded to deal with the grammatical structure of various languages. A look at Navajo grammar should provide the Navajo student with an increased understanding of the structure of his own language. This will enable him to manipulate the language better and to explain the language to non-Navajos in a way in which they can understand it. It will also help Navajos in learning English grammar.

Eventually Rough Rock should produce some textbooks on Navajo grammar for Navajo students. In the meantime, it is suggested that the grammar on pages 1-123 of the Young and Morgan dictionary be used and followed in teaching Navajo grammar. The sequence followed in this book could easily be followed by the teachers.

Navajo grammar is to be taught only in divisions seven through twelve. The first four divisions could be designed to cover the material in the Young and Morgan dictionary. The material could be structured as follows:

Division Seven:	Pages 1-16. The vowels, consonants, gender, number, the pronouns, basic nouns, and compound nouns.
Division Eight:	Pages 16-40. The enclitics, postpositions, particles, numerals, and adjectives.
Division Nine:	Pages 40-76. The verb, verb stem, tense, objects, active and passive voice, transitive and intransitive, imperative, diectic prefixes, modal prefixes, pronoun objects, and verbal prefixes.
Division Ten:	Pages 77-123. The verb paradigms and Navajo syntax.

Divisions Eleven and Twelve could be devoted to some of the more intensive analyses of Navajo lanuguage by such people as Edward Sapis, Harry Hoijer, Berard Haile, and Gladys Reichard. The teacher should obtain an extensive bibliography of the materials, books and articles written on Navajo grammar. The best or all of these should be available to the teacher and in the library. A short bibliography is provided here.

The teacher and students may wish to disagree with many of the conclusions of those who have written on the Navajo language. This should be encouraged because all of this material should be evaluated by the students and the teacher.

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1951 *Navaho Grammar*. Publications of the American Ethnological Society: XXI. New York: J. J. Augustin.

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1943 *The Navajo Language*. Educational Division, Bureau of Indian Affairs, Phoenix, Ariz.

Division One

Unit One: Naaldloshii (Only the domesticated ones)

Lesson One:	Dibé, Łį́į́, Tł'izi, beegashií, Łeechą́'i (domesticated animals)
Lesson Two:	Continue Lesson One.
Lesson Three:	Animals domesticated by man but not known to or used by the Navajos such as the camel.
Lesson Four:	Continue Lesson Three
Lesson Five:	Various names for and kinds of horses.
Lesson Six:	Continue Lesson Five.
Lesson Seven:	Various kinds of cattle, pigs, chickens, etc.
Lesson Eight:	Continue Lesson Seven.

Unit Two: Kinship Terms

Lesson One:	Shimá, dóó Shizhé'é dóó Shyáázh dóó shiché'é dóó shá'ałchini dóó shiyę̀ dóó shitsi'
Lesson Two:	Shinaí dóó sitsilí, shadí dóó shideezhi, shik'is dóó shilá
Lesson Three:	Shimá Yazhi, Shik'a'i dóó Shida'i, shida', shahastoí dóó shiyáázh
Lesson Four:	Shicheii dóó shimá saní, shitsoii dóó shtsooké
Lesson Five:	Shizhé'é Yázhi dóo shibizhí

Lesson Six: Shił naa'ash dóó sizeedi (contrast with Lesson Two)

Lesson Seven: Shinalí

Lesson Eight: Naakidí shimá sąní dóó shicheii dóó shinalí

Unit Three: Hoghanjí

Lesson One: Names for different kinds of hoghans and houses.

Lesson Two: Names for different parts of hoghans and houses.

Lesson Three: Names for different kinds of sheep and horse corrals.

Lesson Four: Parts of wagon and trucks

Lesson Five: Different kinds of furniture

Lesson Six: Navaho foods

Lesson Seven: Navaho foods

Lesson Eight: Navaho foods

Unit Four: Plants

Lesson One: Deiyą́nígíí (corn, pinons, watermelon, etc.)

Lesson Two: Continue Lesson One

Lesson Three: Medicine plants

Lesson Four: Continue Lesson Three.

Lesson Five: Dangerous plants.

Lesson Six: Plants used in ceremonies but not as medicine.

Lesson Seven: Plants eaten by sheep, horses, and cattle.

Lesson Eight: Review.

Division Two

Unit One: Naat'a'ii (animals which fly)

Lesson One: Tsidi (birds)

Lesson Two: Lesson One continued

Lesson Three: Lesson One Continued

Lesson Four: Lesson One continued (Birds not known to reservation)

Lesson Five: Feathers from birds used in ceremonies

Lesson Six: Ch'oosh ndaat'a'ígíí (flying insects)

Lesson Seven: Lesson Six continued

Lesson Eight: Lesson Six continued

Unit Two: Navaho Clans

Lesson One: Myths about the origin of clans

Lesson Two: Lesson One continued

Lesson Three: Different groups of clans and origin of each group

Lesson Four: Lesson Three continued

Lesson Five: Lesson Three continued

Lesson Six: Lesson Three continued

Lesson Seven: The one is related to one of various clans

Lesson Eight: What clans can marry

Unit Three: Navajo arts and crafts

Lesson One:	Various terms used in weaving
Lesson Two:	Lesson One continued
Lesson Three:	Terms used in silversmithing
Lesson Four:	Pottery
Lesson Five:	Basketmaking
Lesson Six:	Moccasin making
Lesson Seven:	Saddle making
Lesson Eight:	Any other

Unit Four: Rocks and Metals and Earth Surface

Lesson One:	Various kinds of rocks
Lesson Two:	Continue Lesson One
Lesson Three:	Continue Lesson One
Lesson Four:	Various kinds of metal
Lesson Five:	Continue Lesson Four
Lesson Six:	Formations on earth's surface such as mountains, various kinds of hills, lakes, rivers, canyons, caves, etc.
Lessons Seven & Eight :	Continue Lesson Six Rocks used in ceremonies could be discussed.

Division Three

Unit One: Animals which live in the ground (Łeehyi' dabaghoniigii)

Lesson One: Snakes

Lesson Two: Lesson One continued. Taboos regarding these crawlers, insects, etc. could also be discussed.

Lesson Three: Rodents (gophers, prairie dogs, mice, etc.)

Lesson Four: Lesson Three continued

Lesson Five: Ants

Lesson Six: Ants continued

Lesson Seven: Others

Lesson Eight: Various kinds of fish

Unit Two: Diné binahoghá

Lesson One: Names, type, and classification of various ceremonies (ha taal) (hozonji)

Lessons Two - Five:

Continue Lesson One

Lesson Six: Ńdáa

Lesson Seven: Tł'éejí

Lesson Eight: Dziłk'ehjí

Unit Three: The tools and machines of man
Introduction should be with single machines

Lesson One: Heavy equipment (non-farm equipment)

Lesson Two: Hand tools (wrenches, pliers, etc.)

Lesson Three: Lesson Two continued

Lesson Four: Lesson Two continued

Lesson Five: Office machines

Lesson Six: Farm tools and equipment

Lesson Seven: Navajo tools (grinding stones, combs, stirring sticks,etc.)

Lesson Eight: Flying machines

Unit Four:

Lesson One: Medicine plants continued from Division One.

Lessons Two - Four:

Medicine Plants

Lessons Five - Seven: Trees

Lesson Eight: Plants which grow in water and discussion of different temperate zones which affect growth of things.

Division Four

Unit One: Ch'osh

Lesson One: Various kinds, types, and habits of ch'osh

Lesson Two: Continue Lesson One

Lesson Three: Continue Lesson One

Lesson Four: Continue Lesson One

Lesson Five: Continue Lesson One

Lesson Six: Continue Lesson One

Lesson Seven: Ch'oosh doo ya'at'eehi

Lesson Eight: Continue Lesson Seven

Unit Two: Navajo and Anglo social activities

Lesson One: Games

Lesson Two: Continue Lesson One

Lesson Three: Types of singing and music in Navajo and Anglo society

Lesson Four: The rodeo

Lesson Five: Continue Lesson Four

Lesson Six: Navajo months of year

Lesson Seven: Navajo names for Anglo holidays

Lesson Eight: Navajo terms for various parts of the day and year. Also Navajo terms for telling time.

Unit Three: Navajo language in the electronic age

Lesson One: Electricity. Navajo terms for various aspects and uses

Lesson Two: Television, radio, phonograph, movies, tape recorders, telegraph, telephone, etc.

Lessons Three - Four: Continue Lesson Two

Lesson Five: Computers and calculators

Lesson Six: Continue Lesson Five

Lesson Seven: Open

Lesson Eight: Open

Unit Four: Various kinds of fluids (to various kinds) and place names.

Lesson One: Fluids and uses

Lessons Two - Three: Fluids

Lesson Four: Place names in local area

Lesson Five: Place names on reservation

Lesson Six: Continue Lesson Five

Lesson Seven: Place names off reservation (Navajo terms)

Lesson Eight: Open

Division Five

__Unit One__: Game animals

Lesson One: Game animals known to reservation (deer, antelope, bobcat, etc.)

Lessons Two - Four: Continue Lesson One

Lesson Five: Animals not known to reservation such as elephants, tigers, alligators, etc.

Lessons Six - Eight: Continue Lesson Five

__Unit Two__: Navajo civics

Lesson One: Local chapters and officers

Lesson Two: Districts

Lesson Three: Tribal council and committees, etc.

Lessons Four - Five: Continue Lesson Three

Lesson Six: Chairman & Vice Chairman

Lesson Seven: Navajo Tribal administrative divisions

Lesson Eight: State and Federal governments

__Unit Three__: Navajo language in the Space Age

Lesson One: Develop Navajo terms for such things as radar, lazer beam, rockets, satellites, space ships, stations orbit, gravity, centrifugal force, etc.

Lessons Two - Eight: Continue Lesson One

Unit Four: Hot'ah niilyai (Items in space)

Lesson One: The earth

Lessons Two - Three: The sun and moon

Lesson Four - Five: Other planets in our solar system

Lesson Six: The stars

Lesson Seven: Continue Lesson Six

Lesson Eight: Open

Division Six

Unit One: Anaa'i (other peoples)

Lesson One: Indians of the Southwest

Lesson Two: Continue Lesson One

Lesson Three: Continue Lesson One

Lesson Four: Other Indians

Lesson Five: Continue Lesson Four

Lesson Six: Other peoples and lands across the world

Lesson Seven: Continue Lesson Six

Lesson Eight: Continue Lesson Seven

Unit Two: Bee 'iinanii (vocations or means of livelihood)

Lessons One - Two: Traditional occupations in Navajo society

Lesson Three: Modern occupations such as teacher, nurse, doctor, engineer, lawyer, heavy equipment operator, forest ranger, policeman, athlete, politician, etc.

Lessons Four - Eight:

Continue Less Three

Unit Three: Human Body Parts

Lessons One through Eight:

Start with the Navajo language version of "what's inside me"

Follow the above with Werner and Begishe's Navajo atlas of the human body parts.

Unit Four: Human body parts continued

Lessons One through Eight: Follow instructions given for Unit Three.

Physical Science

I. Material Objects

A. Observation of Characteristics

1. setting criteria and establishing standards
2. criteria are arbitrary and variable according to the need
3. objects may fall into more than one group at the same
4. time according to the traits considered
4. grouping according to like and unlike traits:

size
shape
color
form
texture

composition
value
origin
componants
phase

quantity
volume
measurement
weight

5. phases of matter: matter has mass, occupies space, solid, liquids and gases
6. objects to be sorted:

seeds
rocks
buttons
coins

B. Characteristics of rocks and soils

1. Sorted and grouped according to:

hardness
formation
origin

2. study of rock and soil formation and decomposition
3. sand, clay, silt and loam

II. Interaction - systems and subsystems

A. Observation of interaction between and among objects
The universe contains interralated objects

1. Physical interaction - physical contact between [illegible] interacting agents
    - a. friction
    - b. friction reduction
    - c. erosional interaction on rocks
    - d. running water
    - e. air currents and wind
    - f. bougancy and floatation
    - g. thermal reactions - expansion of solids, liquid and gases

        h. solutions, emultions and suspensions
        i. filtration
        j. simple cmachines 0 development of complex machines
        k. equilibruim
        l. gravitation
        m. motion and inertia
        n. solar system - our planet spports life - weather changes the earth's surface

2. 2. Chemical interaction

        a. the universe as source of energy
        b. matter and evergy are interchangable
        c. chemical energy
        d. useful forms of energy: heat, light electricity and sound
        e. gas formation and propulsion
        f. oxidation - fire, decomposition
        g. acids and bases

III. Atomic and molecular theory

    A. Components of thekatom: proton, nuetron and electron

        1. positive and electriccharge
        2. electron transfer - flow of elecrons - elcetricity

    B. Molecular make-up - formation of molecules

        1. atomic energy - fission and fussion
        2. the elements - 12 common ones
        3. economic georgraphy - mining of copper , iron, coal, uranium, etc in the Four Corners area.

[illegible]

I. Living things - organisms

A. Observation of self as a living organism.

B. Characteristics of living things

1 1. motion
   2. use of food and water
   3. reproduction
   4. morphology
   5. adaptation
   6. respiration
   7. growth and life cycle
   8. reaction

C. Discrimination between orgainisms and non-living material
D. Requirements of living things
E. Cell concept - all living things are composed of cells
F. Introduction to cell anatomy
G. Study of microscopic organisms

   1. observe the characteristics of life
   2. unicellular and multicellular forms

II. Plants - botony

A. Seeds -collection and sorting

   1. needs for germination
   2. growth and measurement
   3. function of the parts
   4. characteristics of life
   5. interaction- soil , air, water, light, the vegetal organism and other organisms.
   6. economically impprtant seeds and seeds used for food.

B. Plant anatomy and function

C. Photosynthesis - where plants get food-autotrophs and saprophytes

   1. plant cell anatomy
   2. interaction of light, CO_2, water and chlorophyll - synthesis of sugar
   3. simple autotrophs
   4. complex autotrophs
   5. growth requirements
   6. reaction land motion in plants
   7. cultivation - study of fruit, vegetables, and grasses

D. Metabolism - food synthesis

1. carbohydrates - sugars and starches
2. fats and oils
3. proteins
4. digestion and assimilation
5. food energy transfer - vegetal food substances changes to animal food substances
6. ingestion - digestion - oxidation, assimilation - excretion

E. Food chains and ecosystems

1. study of sage - sheep - man relationship
2. yucca plant - yucca moth relationship
3. ecology of sheep, goats, and cattle

F. Populations, communities, and biotic potential

III. Animals - zoology

A. Invertebrates

1. Protozoa - pathogens, antibiotics, antibodies
2. Mollusks
3. Chilopods and diplods
4. Arachnids and related groups
5. Insects - entomology - larval and nymph forms - metamorphosis - adult forms - anatomy families - insecticides

B. Vertebrates

1. Fish - osmosis - respiration - excretion - adaptation morphology - reproduction - anatomy
2. Amphibians
3. Reptiles - ecological importance
4. Birds - reptilian characteristics ; adaptations - anatomy
5. Mammals - classification - likenesses - specially adapted forms - natural selection - breeding - anatomy.